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SCIENCE FICTION

AUGUST 1956
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by Theodore Sturgeon

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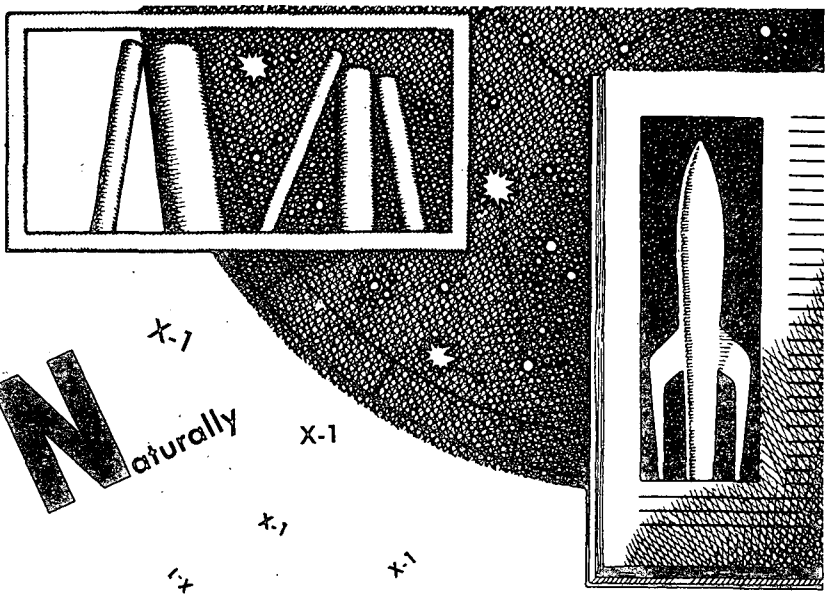

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AUGUST, 1956 VOL. 12, NO. 4

Galaxy

SCIENCE FICTION

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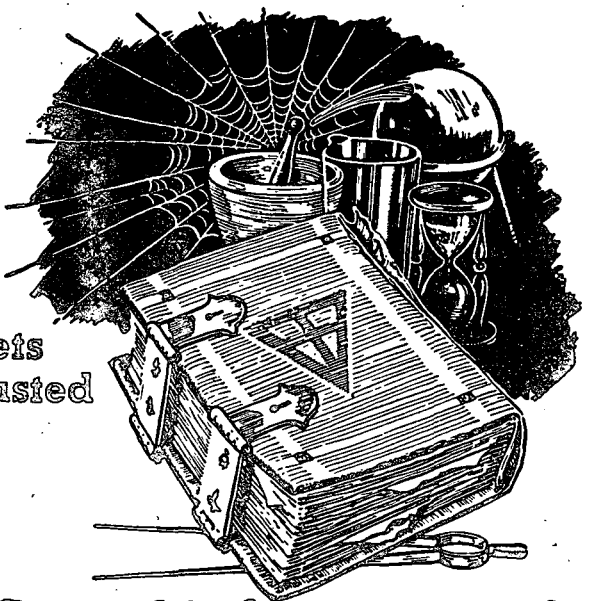

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Time in Advance

By WILLIAM TENN

By using this installment plan, Crandall endured the worst that the Galaxy had to offer. Now it was Earth's turn to sweat!

TWENTY minutes after the convict ship landed at the New York Spaceport, reporters were allowed aboard. They came boiling up the main corridor, pushing against the heavily armed guards who were conducting them, the feature-story men and by-line columnists in the lead, the TV people with their portable but still-heavy equipment cursing along behind.

Illustrated by DICK FRANCIS

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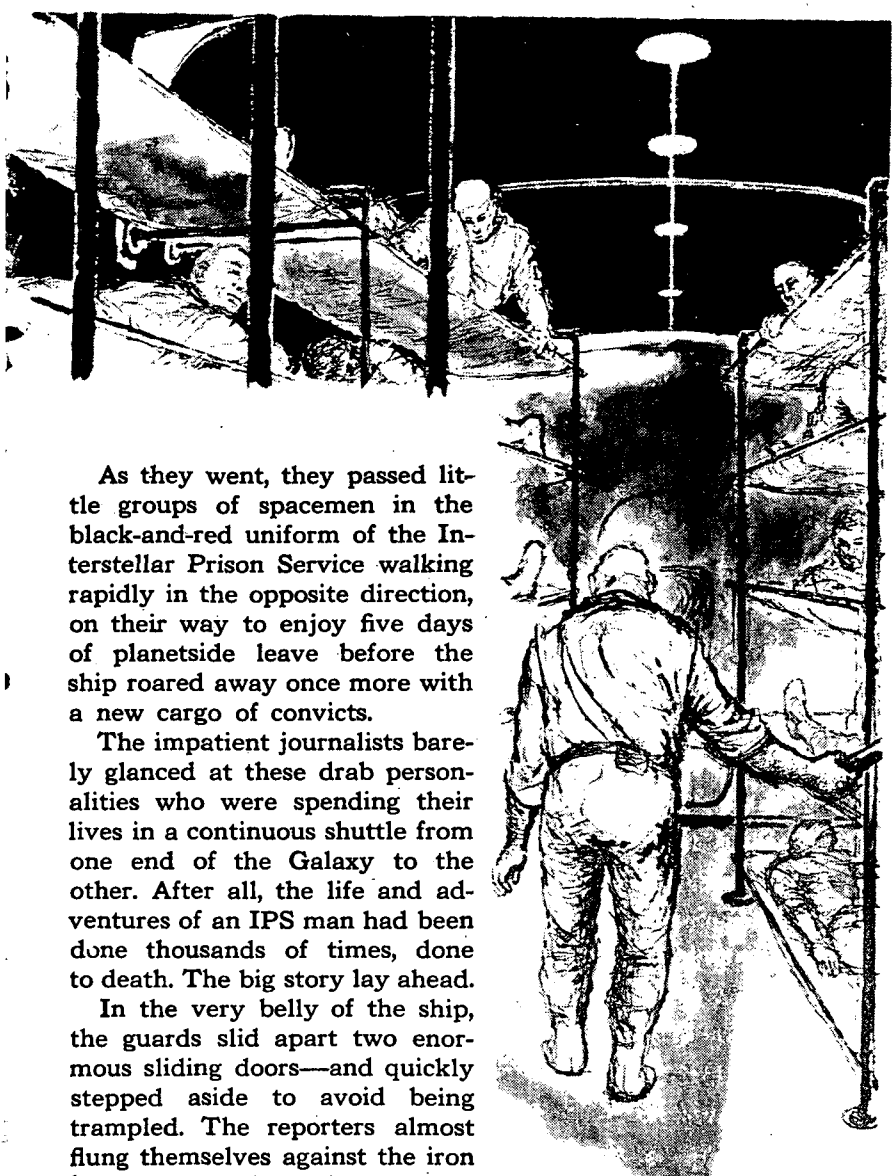

As they went, they passed little groups of spacemen in the black-and-red uniform of the Interstellar Prison Service walking rapidly in the opposite direction, on their way to enjoy five days of planetside leave before the ship roared away once more with a new cargo of convicts.

The impatient journalists barely glanced at these drab personalities who were spending their lives in a continuous shuttle from one end of the Galaxy to the other. After all, the life and adventures of an IPS man had been done thousands of times, done to death. The big story lay ahead.

In the very belly of the ship, the guards slid apart two enormous sliding doors—and quickly stepped aside to avoid being trampled. The reporters almost flung themselves against the iron bars that ran from floor to ceil-

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ing and completely shut off the great prison chamber. Their eager, darting stares were met with by at most a few curious glances from the men in coarse gray suits who lay or sat in the tiers of bunks that rose in row after sternly functional row all the way down the cargo hold. Each man clutched — and some caressed — a small package neatly wrapped in plain brown paper.

The chief guard ambled up on the other side of the bars, picking the morning's breakfast out of his front teeth. "Hi, boys," he said. "Who're you looking for— as if I didn't know?"

ONE of the older, more famous columnists held the palm of his hand up warningly. "Look, Anderson: no games. The ship's been almost a half-hour late in landing and we were stalled for fifteen minutes at the gangplank. Now where the hell are they?"

Anderson watched the TV crews shoulder a place for themselves and their equipment right up to the barrier. He tugged a last bit of food out of one of his molars.

"Ghouls," he muttered. "A bunch of grave-happy, funeral-hungry ghouls." Then he hefted his club experimentally a couple of times and clattered it back and forth against the bars. "Crandall!" he bellowed. "Henck! Front and center!"

The cry was picked up by the guards strolling about, steadily, measuredly, club-twirlingly, inside the prison pen. "Crandall! Henck! Front and center!" It went ricocheting authoritatively up and down the tremendous curved walls. "Crandall! Henck! Front and center!"

Nicholas Crandall sat up cross-legged in his bunk on the fifth tier and grimaced. He had been dozing and now he rubbed a hand across his eyes to erase the sleep. There were three parallel scars across the back of his hand, old and brown and straight scars such as an animal's claws might rake out. There was also a curious zigzag scar just above his eyes that had a more reddish novelty. And there was a tiny, perfectly round hole in the middle of his left ear which, after coming fully awake, he scratched in annoyance.

"Reception committee," he grumbled. "Might have known. Same old goddam Earth as ever."

He flipped over on his stomach and reached down to pat the face of the little man snoring on the bunk immediately under him. "Otto," he called. "Blotto Otto — up and at 'em! They want us."

Henck immediately sat up in the same cross-legged fashion,

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even before his eyes had opened. His right hand went to his throat where there was a little network of zigzag scars of the same color and size as the one Crandall had on his forehead. The hand was missing an index and forefinger.

"Henck here, sir," he said thickly, then shook his head and stared up at Crandall. "Oh — Nick. What's up?"

"We've arrived, Blotto Otto," the taller man said from the bunk above. "We're on Earth and they're getting our discharges ready. In about half an hour, you'll be able to wrap that tongue of yours around as much brandy, beer, vodka and rotgut whiskey as you can pay for. No more prison-brew, no more raisin-jack from a tin can under the bed, Blotto Otto."

HENCK grunted and flopped down on his back again. "In half an hour, but not now, so why did you have to go and wake me up? What do you take me for, some dewy, post-crime, petty-larceny kid, sweating out my discharge with my eyes open and my gut wriggling? Hey, Nick, I was dreaming of a new way to get Elsa, a brand-new, really ugly way."

"The screws are in an uproar," Crandall told him, still in a low, patient voice. "Hear them? They want us, you and me."

Henck sat up again, listened a moment, and nodded. "Why is it," he asked, "that only space-screws have voices like that?"

"It's a requirement of the service," Crandall assured him. "You've got to be at least a minimum height, have a minimum education and with a minimum nasty voice of just the right ear-splitting quality before you can get to be a space-screw. Otherwise, no matter how vicious a personality you have, you are just plain out of luck and have to stay behind on Earth and go on getting your kicks by running down slowpoke 'copters driven by old ladies."

A guard stopped below, banged angrily at one of the metal posts that supported their tier of bunks. "Crandall! Henck! You're still convicts, don't you forget that! If you don't front-and-center in a double-time hurry, I'll climb up there and work you over once more for old-time's sake!"

"Yes, *sir*! Coming, *sir*!" they said in immediate, mumbling unison and began climbing down from bunk to bunk, each still clutching the brown-paper package that contained the clothes they had once worn as free men and would shortly be allowed to wear again.

"Listen, Otto." Crandall leaned down as they climbed and brought his lips close to the lit-

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tle man's ear in the rapid-fire, extremely low-pitched prison whisper. "They're taking us to meet the television and news boys. We're going to be asked a lot of questions. One thing you want to be sure to keep your lip buttoned about—"

"Television and news? Why us? What do they want with us?"

"Because we're celebrities, knockhead! We've seen it through for the big rap and come out on the other side. How many men do you think have made it? But *listen*, will you? If they ask you who it is you're after, you just shut up and smile. You don't answer that question. Got that? You don't tell them whose murder you were sentenced for, no matter what they say. They can't make you. That's the law."

Henck paused a moment, one and a half bunks from the floor. "But, Nick, *Elsa* knows! I told her that day, just before I turned myself in. She knows I wouldn't take a murder rap for anyone but her!"

"She knows, she knows, of *course* she knows!" Crandall swore briefly and almost inaudibly. "But she can't *prove* it, you goddam human blotter! Once you say so in public, though, she's entitled to arm herself and shoot you down on sight — pleading self-defense. And till you say so, she can't; she's still your poor wife whom you've promised to love, honor and cherish. As far as the world is concerned—"

THE guard reached up with his club and jolted them both angrily across the back. They dropped to the floor and cringed as he snarled over them: "Did I say you could have a talk-party? *Did I?* If we have any time left before you get your discharge, I'm taking you cuties into the guard-room for one last big going-over. Now pick them up and put them down!"

They scuttled in front of him obediently, like a pair of chickens before a snapping collie. At the barred gate near the end of the prison hold, he saluted and said: "Pre-criminals Nicholas Crandall and Otto Henck, sir."

Chief Guard Anderson wiped the salute back at him carelessly. "These gentlemen want to ask you fellas a couple of questions. Won't hurt you to answer. That's all, O'Brien."

His voice was very jovial. He was wearing a big, gentle, half-moon smile. As the subordinate guard saluted and moved away, Crandall let his mind regurgitate memories of Anderson all through this month-long trip from Proxima Centaurus. Anderson nodding thoughtfully as that poor Minelli — Steve Minelli, hadn't that been his name? — was made to run

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through a gauntlet of club-swinging guards for going to the toilet without permission. Anderson chuckling just a moment before he'd kicked a gray-headed convict in the groin for talking on the chow-line. Anderson—

Well, the guy had guts, anyway, knowing that his ship carried two pre-criminals who had served out a murder sentence. But he probably also knew that they wouldn't waste the murder on him, however viciously he acted. A man doesn't volunteer for a hitch in hell just so he can knock off one of the devils.

"Do we have to answer these questions, sir?" Crandall asked cautiously, tentatively.

The chief guard's smile lost the tiniest bit of its curvature. "I said it wouldn't hurt you, didn't I? But other things might. They *still* might, Crandall. I'd like to do these gentlemen from the press a favor, so you be nice and cooperative, eh?" He gestured with his chin, ever so slightly, in the direction of the guard-room and hefted his club a bit.

"Yes, sir," Crandall said, while Henck nodded violently. "We'll be cooperative, sir."

Dammit, he thought, *if only I didn't have such a use for that murder! Let's keep remembering Stephanson, boy, no one but Stephanson! Not Anderson, not O'Brien, not anybody else: the name under discussion is Frederick Stoddard Stephanson!*

WHILE the television men on the other side of the bars were fussing their equipment into position, the two convicts answered the preliminary, inevitable questions of the feature writers:

"How does it feel to be back?"

"Fine, just fine."

"What's the first thing you're going to do when you get your discharge?"

"Eat a good meal." (From Crandall.)

"Get roaring drunk." (From Henck.)

"Careful you don't wind up right behind bars again as a post-criminal." (From one of the feature writers.) A good-natured laugh in which all of them, the newsmen, Chief Guard Anderson, and Crandall and Henck, participated.

"How were you treated while you were prisoners?"

"Oh, pretty good." (From both of them, concurrent with a thoughtful glance at Anderson's club.)

"Either of you care to tell us who you're going to murder?"

(Silence.)

"Either of you changed your mind and decided not to commit the murder?"

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(Crandall looked thoughtfully up, while Henck looked thoughtfully down.) Another general laugh, a bit more uneasy this time, Crandall and Henck not participating.

"All right, we're set. Look this way, please," the television announcer broke in. "And smile, men — let's have a really *big* smile."

Crandall and Henck dutifully emitted big smiles, which made three smiles, for Anderson had moved into the cheerful little group.

The two cameras shot out of the grasp of their technicians, one hovering over them, one moving restlessly before their faces, both controlled, at a distance, by the little box of switches in the cameramen's hands. A red bulb in the nose of one of the cameras lit up.

"Here we are, ladies and gentlemen of the television audience," the announcer exuded in a lavish voice. "We are on board the convict ship *Jean Valjean*, which has just landed at the New York Spaceport. We are here to meet two men — two of the rare men who have managed to serve all of a voluntary sentence for murder and thus are legally entitled to commit one murder apiece.

"In just a few moments, they will be discharged after having served out seven full years on the convict planets — and they will be free to kill any man or woman in the Solar System with absolutely no fear of any kind of retribution. Take a good look at them, ladies and gentlemen of the television audience — it might be you they are after!"

AFTER this cheering thought, the announcer let a moment or two elapse while the cameras let their lenses stare at the two men in prison gray. Then he stepped into range himself and addressed the smaller man.

"What is your name, sir?" he asked.

"Pre-criminal Otto Henck, 525514," Blotto Otto responded automatically, though not able to repress a bit of a start at the *sir*.

"How does it feel to be back?"

"Fine, just fine."

"What's the first thing you're going to do when you get your discharge?"

Henck hesitated, then said, "Eat a good meal," after a shy look at Crandall.

"How were you treated while you were a prisoner?"

"Oh, pretty good. As good as you could expect."

"As good as a criminal could expect, eh? Although you're not really a criminal yet, are you? You're a pre-criminal."

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Henck smiled as if this were the first time he was hearing the term. "That's right, sir. I'm a pre-criminal."

"Want to tell the audience who the person is you're going to become a criminal for?"

Henck looked reproachfully at the announcer, who chuckled throatily — and alone.

"Or if you've changed your mind about him or her?" There was a pause. Then the announcer said a little nervously: "You've served seven years on danger-filled, alien planets, preparing them for human colonization. That's the maximum sentence the law allows, isn't it?"

"That's right, sir. With the pre-criminal discount for serving the sentence in advance, seven years is the most you can get for murder."

"Bet you're glad we're not back in the days of capital punishment, eh? That would make the whole thing impractical, wouldn't it? Now, Mr. Henck — or pre-criminal Henck, I guess I should still call you — suppose you tell the ladies and gentlemen of our television audience: What was the most horrifying experience you had while you were serving your sentence?"

"Well," Otto Henck considered carefully. "About the worst of the lot, I guess, was the time on Antares VIII, the second prison camp I was in, when the big wasps started to spawn. They got a wasp on Antares VIII, see, that's about a hundred times the size of—"

"Is that how you lost those two fingers on your right hand?"

HENCK brought his hand up and studied it for a moment. "No. The forefinger — I lost the forefinger on Rigel XII. We were building the first prison camp on the planet and I dug up a funny kind of red rock that had all sorts of little bumps on it. I poked it, kind of — you know, just to see how hard it was or something — and the tip of my finger disappeared. *Pow*— just like that. Later on, the whole finger got infected and the medics had to cut it off.

"It turned out I was lucky, though; some of the men — the convicts, I mean — ran into bigger rocks than the one I found. Those guys lost arms, legs — one guy even got swallowed whole. They weren't really rocks, see. They were alive—they were alive and hungry! Rigel XII was lousy with them. The middle finger — I lost the middle finger in a dumb kind of accident on board ship while we were being moved to—"

The announcer nodded intelligently, cleared his throat and said: "But those wasps, those gi-

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ant wasps on Antares VIII — they were the worst?"

Blotto Otto blinked at him for a moment before he found the conversation again.

"Oh. They sure were! They were used to laying their eggs in a kind of monkey they have on Antares VIII, see? It was real rough on the monkey, but that's how the baby wasps got their food while they were growing up. Well, we get out there and it turns out that the wasps can't see any difference between those Antares monkeys and human beings. First thing you know, guys start collapsing all over the place and when they're taken to the dispensary for an X-ray, the medics see that they're completely crammed—"

"Thank you very much, Mr. Henck, but Herkimer's Wasp has already been seen by and described to our audience at least three times in the past on the Interstellar Travelogue, which is carried by this network, as you ladies and gentlemen no doubt remember, on Wednesday evenings from seven to seven-thirty P.M. terrestrial standard time. And now, Mr. Crandall, let me ask you, sir: How does it feel to be back?"

Crandall stepped up and was put through almost exactly the same verbal paces as his fellow prisoner.

THERE was one major difference. The announcer asked him if he expected to find Earth much changed. Crandall started to shrug, then abruptly relaxed and grinned. He was careful to make the grin an extremely wide one, exposing a maximum of tooth and a minimum of mirth.

"There's one big change I can see already," he said. "The way those cameras float around and are controlled from a little switch-box in the cameraman's hand. That gimmick wasn't around the day I left. Whoever invented it must have been pretty clever."

"Oh, yes?" The announcer glanced briefly backward. "You mean the Stephanson Remote Control Switch? It was invented by Frederick Stoddard Stephanson about five years ago— Was it five years, Don?"

"Six years," said the cameraman. "Went on the market five years ago."

"It was *invented* six years ago," the announcer translated. "It went on the market *five* years ago."

Crandall nodded. "Well, this Frederick Stoddard Stephanson must be a clever man, a very clever man." And he grinned again into the cameras. *Look at my teeth,* he thought to himself. *I know you're watching, Freddy. Look at my teeth and shiver.*

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The announcer seemed a bit disconcerted. "Yes," he said. "Exactly. Now, Mr. Crandall, what would you describe as the most horrifying experience in your entire . . ."

After the TV men had rolled up their equipment and departed, the two pre-criminals were subjected to a final barrage of questions from the feature writers and columnists in search of odd shreds of color.

"What about the women in your life?" "What books, what hobbies, what amusements filled your time?" "Did you find out that there are no atheists on convict planets?" "If you had the whole thing to do over again—"

As he answered, drably, courteously, Nicholas Crandall was thinking about Frederick Stoddard Stephanson seated in front of his luxurious wall-size television set.

Would Stephanson have clicked it off by now? Would he be sitting there, staring at the blank screen, pondering the plans of the man who had outlived odds estimated at ten thousand to one and returned after seven full, unbelievable years in the prison camps of four insane planets?

WOULD Stephanson be examining his blaster with sucked-in lips — the blaster that he might use only in an open-and-shut situation of self-defense if he wished to avoid the post-criminal sentence for murder, which, without the fifty per cent discount for punishment voluntarily undergone in advance of the crime, was as much as fourteen years in the many-pronged hell from which he, Crandall, had just returned?

Or would Stephanson be sitting, slumped in an expensive bubblechair, glumly watching a still-active screen, frightened out of his wits but still unable to tear himself away from the well-organized program the network had no doubt built around the return of two — count 'em: *two!* —homicidal pre-criminals?

At the moment, in all probability, the screen was showing an interview with some Earthside official of the Interstellar Prison Service, an expansive public relations character who had learned to talk in sociology.

"Tell me, Mr. Public Relations," the announcer would ask (a different announcer, more serious, more intellectual), "how often do pre-criminals serve out a sentence for murder and return?"

"According to statistics—" a rustle of papers at this point and a penetrating glance downward — "according to statistics, we may expect a man who has served

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a full sentence for murder, with the 50 per cent pre-criminal discount, to return only once in 11.7 years on the average."

"You would say, then, wouldn't you, Mr. Public Relations, that the return of two such men on the same day is a rather unusual situation?"

"*Highly* unusual or you television fellas wouldn't be in such a fuss over it." A thick chuckle here, which the announcer dutifully echoes.

And what, Mr. Public Relations, happens to the others who don't return?"

A large, well-fed hand gestures urbanely. "They get killed. Or they give up. Those are the only two alternatives. Seven years is a long time to spend on those convict planets. The work schedule isn't for sissies and neither are the life-forms they encounter —the big man-eating ones as well as the small virus-sized types.

"That's why prison guards get such high salaries and such long leaves. In a sense, you know, we haven't really abolished capital punishment; we've substituted a socially useful form of Russian Roulette for it. Any man who commits or pre-commits one of a group of particularly reprehensible crimes is sent off to a planet where his services will benefit humanity and where he's forced to take his chances on coming back in one piece, if at all. The more serious the crime, the longer the sentence and, therefore, the more remote the chances."

"I see. Now, Mr. Public Relations, you say they either get killed or they give up. Would you explain to the audience, if you please, just how they give up and what happens if they do?"

HERE a sitting back in the chair, a locking of pudgy fingers over paunch. "You see, any pre-criminal may apply to his warden for immediate abrogation of sentence. It's just a matter of filling out the necessary forms. He's pulled off work detail right then and there and is sent home on the very next ship out of the place. The catch is this: Every bit of time he's served up to that point is canceled — he gets nothing for it.

"If he commits an actual crime after being freed, he has to serve the full sentence. If he wants to be committed as a pre-criminal again, he has to start serving the sentence, with the discount, from the beginning. Three out of every four pre-criminals apply for abrogation of sentence in their very first year. You get a bellyful fast in those places."

"I guess you certainly do," agrees the announcer. "What

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about the discount, Mr. Public Relations? Aren't there people who feel that's offering the pre-criminal too much inducement?"

The barest grimace of anger flows across the sleek face, to be succeeded by a warm, contemptuous smile. "Those are people, I'm afraid, who, however well-intentioned, are not well versed in the facts of modern criminology and penology. We don't want to discourage pre-criminals; we want to *encourage* them to turn themselves in.

"Remember what I said about three out of four applying for abrogation of sentence in their very first year? Now these are individuals who were sensible enough to try to get a discount on their sentence. Are they likely to be foolish enough to risk twice as much when they have found out conclusively they can't stand a bare twelve months of it? Not to mention what they have discovered about the value of human life, the necessity for social cooperation and the general desirability of civilized processes on those worlds where simple survival is practically a matter of a sweepstakes ticket.

"The man who doesn't apply for abrogation of sentence? Well, he has that much more time to let the desire to commit the crime go cold — and that much greater likelihood of getting killed with nothing to show for it. Therefore, so few pre-criminals in *any* of the categories return to tell the tale and do the deed that the social profit is absolutely enormous! Let me give you a few figures.

"Using the Lazarus Scale, it has been estimated that the decline in premeditated homicides alone, since the institution of the pre-criminal discount, has been forty-one per cent on Earth, thirty-three and a third per cent on Venus, twenty-seven per cent—"

COLD comfort, chillingly cold comfort, that would be to Stephanson, Nicholas Crandall reflected pleasurably, those forty-one per cents and thirty-three and a third per cents. Crandall's was the balancing statistic: the man who wanted to murder, and for good and sufficient cause, one Frederick Stoddard Stephanson. He was a leftover fraction on a page of reductions and cancellations — he had returned, astonishingly, unbelievably, after seven years to collect the merchandise for which he had paid in advance.

He and Henck. Two ridiculously long long-shots. Henck's wife Elsa — was she, too, sitting in a kind of bird-hypnotized-by-a-snake fashion before her television set, hoping dimly and des-

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perately that some comment of the Interstellar Prison Service official would show her how to evade her fate, how to get out from under the ridiculously rare disaster that was about to happen to her?

Well, Elsa was Blotto Otto's affair. Let him enjoy it in his own way; he'd paid enough for the privilege. But Stephanson was Crandall's.

Oh, let the arrogant bean-pole sweat, he prayed. *Let me take my time and let him sweat!*

The newsmen kept squeezing them for story angles until a loudspeaker in the overhead suddenly cleared its diaphragm and announced:

"Prisoners, prepare for discharge! You will proceed to the ship warden's office in groups of ten, as your name is called. Convict ship discipline will be maintained throughout. Arthur, Augluk, Crandall, Ferrara, Fu-Yen, Garfinkel, Gomez, Graham, Henck—"

A half hour later, they were walking down the main corridor of the ship in their civilian clothes. They showed their discharges to the guard at the gangplank, smiled still cringingly back at Anderson, who called from a porthole, "Hey, fellas, come back soon!" and trotted down the incline to the surface of a planet they had not seen for seven agonizing and horror-crowded years.

There were a few reporters and photographers still waiting for them, and one TV crew which had been left behind to let the world see how they looked at the moment of freedom.

QUESTIONS, more questions to answer, which they could afford to be brusque about, although brusqueness to any but fellow prisoners still came hard.

Fortunately, the newsmen got interested in another pre-criminal who was with them. Fu-Yen had completed the discounted sentence of two years for aggravated assault and battery. He had also lost both arms and one leg to a corrosive moss on Procyon III just before the end of his term and came limping down the gangplank on one real and one artificial leg, unable to grasp the hand-rails.

As he was being asked, with a good deal of interest, just how he intended to commit simple assault and battery, let alone the serious kind, with his present limited resources, Crandall nudged Henck and they climbed quickly into one of the many hovering gyrocabs. They told the driver to take them to a bar — any quiet bar — in the city.

Blotto Otto almost went to pieces under the impact of ac-

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tual free choice. "I can't do it," he whispered. "Nick, there's just too damn much to drink!"

Crandall settled it by ordering for him. "Two double scotches," he told the waitress. "Nothing else."

When the scotch came, Blotto Otto stared at it with the kind of affectionate and wistful astonishment a man might show toward an adolescent son whom he saw last as a babe in arms. He put out a gingerly, trembling hand.

"Here's death to our enemies," Crandall said, and tossed his down. He watched Otto sip slowly and carefully, tasting each individual drop.

"You'd better take it easy," he warned. "Elsa might have no more trouble from you than bringing flowers every visiting day to the alcoholic ward."

"No fear," Blotto Otto growled into his empty glass. "I was weaned on this stuff. And, anyway, it's the last drink I have until I dump her. That's the way I've been figuring it, Nick: one drink to celebrate, then Elsa. I didn't go through those seven years to mess myself up at the payoff."

HE SET the glass down. "Seven years in one steaming hell after another. And before that, twelve years with Elsa. Twelve years with her pulling every dirty trick in the book on me, laughing in my face, telling me she was my wife and had me legally where she wanted me, that I was gonna support her the way she wanted to be supported and I was gonna like it. And if I dared to get off my knees and stand on my hind legs, *pow*, she found a way to get me arrested.

"The weeks I spent in the cooler, in the workhouse, until Elsa would tell the judge maybe I'd learned my lesson, she was willing to give me one more chance! And me begging for a divorce on my knees — hell, on my belly! —no children, she's able-bodied, she's young, and her laughing in my face. When she wanted me in the cooler, see, then she's crying in front of the judge; but when we're alone, she's always laughing her head off to see me squirm.

"I supported her, Nick. Honest, I gave her almost every cent I made, but that wasn't enough. She liked to see me squirm; she *told* me she did. Well, who's squirming now?" He grunted deep in his throat. "Marriage— it's for chumps!"

Crandall looked out of the open window he was sitting against, down through the dizzy, busy levels of Metropolitan New York.

"Maybe it is," he said thought-

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fully. "I wouldn't know. My marriage was good while it lasted, five years of it. Then, all of a sudden, it wasn't good any more, just so much rancid butter."

"At least she gave you a divorce," said Henck. "She didn't take you."

"Oh, Polly wasn't the kind of girl to take anyone. A little mixed up, but maybe no more than I was. Pretty Polly, I called her; Big Nick, she called me. The starlight faded and so did I, I guess. I was still knocking myself out then trying to make a go out of the wholesale electronics business with Irv. Anyone could tell I wasn't cut out to be a millionaire. Maybe that was it. Anyway, Polly wanted out and I gave it to her. We parted friends. I wonder, every once in a while, what she's—"

There was a slight splashy noise, like a seal's flipper making a gesture in the water. Crandall's eyes came back to the table a moment after the green, melon-like ball had hit it. And, at the same instant, Henck's hand had swept the ball up and hurled it through the window. The long, green threads streamed out of the ball, but by then it was falling down the side of the enormous building and the threads found no living flesh to take root in.

From the corner of his eye, Crandall had seen a man bolt out of the bar. By the way people kept looking back and forth fearfully from their table to the open doorway, he deduced that the man had thrown it. Evidently Stephanson had thought it worthwhile to have Crandall followed and neutralized.

BLOTTO OTTO saw no point in preening over his reflexes. The two of them had learned to move fast a long time ago — over a lot of dead bodies. "A Venusian dandelion bomb," he observed. "Well, at least the guy doesn't want to kill you, Nick. He just wants to cripple you."

"That would be Stephanson's style," Crandall agreed, as they paid their check and walked past the faces which were just now beginning to turn white. "He'd never do it himself. He'd hire a bully-boy. And he'd do the hiring through an intermediary just in case the bully-boy ever got caught and blabbed. But that still wouldn't be safe enough: he wouldn't want to risk a post-criminal murder charge.

"A dose of Venusian dandelion, he'd figure, and he wouldn't have to worry about me for the rest of my life. He might even come to visit me in the home for incurables—like the way he sent me a card every Christmas of my

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sentence. Always the same message: 'Still mad? Love, Freddy.'"

"Quite a guy, this Stephanson," Blotto Otto said, peering around the entrance carefully before stepping out of the bar and onto the fifteenth level walkway.

"Yeah, quite a guy. He's got the world by the tail and every once in a while, just for fun, he twists the tail. I learned how he operated when we were roommates way back in college, but do you thing that did me any good? I ran into him just when that wholesale electronics business with Irv was really falling apart, about two years after I broke up with Polly.

"I was feeling blue and I wanted to talk to someone, so I told him all about how my partner was a penny-watcher and I was a big dreamer, and how between us we were turning a possible nice small business into a definite big bankruptcy. And then I got onto this remote-control switch I'd been fooling around with and how I wished I had time to develop it."

Blotto Otto kept glancing around uneasily, not from dread of another assassin, but out of the unexpected sensation of doing so much walking of his own free will. Several passersby turned around to have another stare at their out-of-fashion knee-length tunics.

"So there I was," Crandall went on. "I was a fool, I know, but take my word, Otto, you have no idea how persuasive and friendly a guy like Freddy Stephanson can be. He tells me he has this house in the country he isn't using right now and there's a complete electronics lab in the basement. It's all mine, if I want it, as long as I want it, starting next week; all I have to worry about is feeding myself. And he doesn't want any rent or anything — it's for old time's sake and because he wants to see me do something really big in the world.

"How smart could I be with a con-artist like that? It wasn't till two years later that I realized he must have had the electronics lab installed the same week I was asking Irv to buy me out of the business for a couple of hundred credits. After all, what would Stephanson, the owner of a brokerage firm, be doing with an electronics lab of his own? But who figures such things when an old roommate's so warm and friendly and interested in you?"

OTTO sighed. "So he comes up to see you every few weeks. And then, about a month after you've got it all finished and working, he locks you out of the place and moves all your papers and stuff to another joint. And he

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tells you he'll have it patented long before you can get it all down on paper again, and anyhow it was his place—he can always claim he was subsidizing you. Then he laughs in your face, just like Elsa. Huh, Nick?"

Crandall bit his lip as he realized how thoroughly Otto Henck must have memorized the material. How many times had they gone over each other's planned revenge and the situations which had motivated it? How many times had they told and retold the same bitter stories to each other, elicited the same responses from each other, the same questions, the same agreements and even the very same disagreements?

Suddenly, he wanted to get away from the little man and enjoy the luxury of loneliness. He saw the sparkling roof of a hotel two levels down.

"Think I'll move into that. Ought to be thinking about a place to sleep tonight."

Otto nodded at his mood rather than at his statement. "Sure. I know just how you feel. But that's pretty plush, Nick: The Capricorn-Ritz. At least twelve credits a day."

"So what? I can live high for a week, if I want to. And with my background, I can always pick up a fast job as soon as I get low. I want something plush for tonight, Blotto Otto."

"Okay, okay. You got my address, huh, Nick? I'll be at my cousin's place."

"I have it, all right. Luck with Elsa, Otto."

"Thanks. Luck with Freddy. Uh — so long." The little man turned abruptly and entered a main street elevator. When the doors slid shut, Crandall found that he was feeling very uncomfortable. Henck had meant more to him than his own brother. Well, after all, he'd been with Henck day and night for a long time now. And he hadn't seen Dan for—how long was it?—almost nine years.

He reflected on how little he was attached to the world, if you excluded the rather negative desire of removing Stephanson from it. One thing he should get soon was a girl—almost any girl.

But, come to think of it, there was something he needed even more.

HE WALKED swiftly to the nearest drugstore. It was a large one, part of a chain. And there, featured prominently in the window, was exactly what he wanted.

At the cigar counter, he said to the clerk: "It's pretty cheap. Do they work all right?"

The clerk drew himself up. "Before we put an item on sale,

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sir, it is tested thoroughly. We are the largest retail outlet in the Solar System — *that's* why it's so cheap."

"All right. Give me the medium-sized one. And two boxes of cartridges."

With the blaster in his possession, he felt much more secure. He had a good deal of confidence —based on years of escaping creatures with hair-trigger nervous systems — in his ability to duck and wriggle and jump to one side. But it would be nice to be able to fight back. And how did he know how soon Stephanson would try again?

He registered under a false name, a ruse he thought of at the last moment. That it wasn't worth much, as ruses went, he found out when the bellhop, after being tipped, said: "Thank you, Mr. Crandall. I hope you get your victim, sir."

So he was a celebrity. Probably everyone in the world knew exactly what he looked like. All of which might make it a bit more difficult to get at Stephanson.

While he was taking a bath, he asked the television set to check through Information's file on the man. Stephanson had been rich and moderately important seven years ago; with the Stephanson Switch — how do you like that, the *Stephanson* Switch! —he must be even richer now and much more important.

He was. The television set informed Crandall that in the last calendar month, there were sixteen news items relating to Frederick Stoddard Stephanson. Crandall considered, then asked for the most recent.

That was datelined today. "Frederick Stephanson, the president of the Stephanson Investment Trust and Stephanson Electronics Corporation, left early this morning for his hunting lodge in Central Tibet. He expects to remain there for at least—"

"That's enough!" Crandall called through the bathroom door.

Stephanson was scared! The arrogant bean-pole was frightened silly! That was something; in fact, it was a large part of the return on those seven years. Let him seethe in his own sweat for a while, until he found the actual killing, when it did come at last, almost welcome.

CRANDALL asked the set for the fresh news and was immediately treated to a bulletin about himself and how he had registered at the Capricorn-Ritz under the name of Alexander Smathers. "But neither is the correct name, ladies and gentlemen," the playback rolled out unctuously. "Neither Nicholas Crandall nor Alexander Smathers is the right name for this man.

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There is only one name for that man — and that name is death! Yes, the grim reaper has taken up residence at the Ritz-Capricorn Hotel tonight, and only he knows which one of us will not see another sunrise. That man, that grim reaper, that deputy of death, is the only one among us who knows—"

"Shut up!" Crandall yelled, exasperated. He had almost forgotten the kind of punishment a free man was forced to endure.

The private phone circuit on the television screen lit up. He dried himself, hurried into clothes and asked, "Who's calling?"

"Mrs. Nicholas Crandall," said the operator's voice.

He stared at the blank screen for a moment, absolutely thunderstruck. Polly! Where in the world had she come from? And how did she know where he was? No, the last part was easy—he was a celebrity.

"Put her on," he said at last.

Polly's face filled the screen. Crandall studied her quizzically. She'd aged a bit, but possibly it wasn't obvious at anything but this magnification.

As if she realized it herself, Polly adjusted the controls on her set and her face dwindled to life-size, the rest of her body as well as her surroundings coming into the picture. She was evidently in the living room of her home; it looked like a low-to-middle-income-range furnished apartment. But she looked good —awfully good. There were such warm memories . . .

"Hi, Polly. What's this all about? You're the last person I expected to call me."

"Hello, Nick." She lifted her hand to her mouth and stared over its knuckles for some time at him. Then: "Nick. Please. Please don't play games with me."

He dropped into a chair. "Huh?"

SHE began to cry. "Oh, Nick! *Don't!* Don't be that cruel! I know why you served that sentence—those seven years. The moment I heard your name today, I knew why you did it. But, Nick, it was only one man—just one man, Nick!"

"Just one man *what?*"

"It was just that one man I was unfaithful with. And I thought he loved me, Nick. I wouldn't have divorced you if I'd known what he was really like. But you know, Nick, don't you? You know how much he made me suffer. I've been punished enough. Don't kill me, Nick! Please don't kill me!"

"Listen, Polly," he began, completely confused. "Polly girl, for heaven's sake—"

"Nick!" she gulped hysterically. "Nick, it was over eleven years ago—ten, at least. Don't kill me

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for that, please, Nick! Nick, truly, I wasn't unfaithful to you for more than a year, two years at the most. Truly, Nick! And, Nick, it was only that one affair—the others didn't count. They were just — just casual things. They didn't matter at all, Nick! But don't kill me! Don't kill me!" She held both hands to her face and began rocking back and forth, moaning uncontrollably.

Crandall stared at her for a moment and moistened his lips. Then he said, "Whew!" and turned the set off. He leaned back in his chair. Again he said, "Whew!" and this time it hissed through his teeth.

Polly! Polly had been unfaithful during their marriage. For a year—no, two years! And—what had she said?—the others, the *others* had just been casual things!

The woman he had loved, the woman he suspected he had always loved, the woman he had given up with infinite regret and a deep sense of guilt when she had come to him and said that the business had taken the best part of him away from her, but that since it wasn't fair to ask him to give up something that obviously meant so much to him—

Pretty Polly. Polly girl. He'd never thought of another woman in all their time together. And if anyone, anyone at all, had ever suggested—had so much as *hinted* — he'd have used a monkey wrench on the meddler's face. He'd given her the divorce only because she'd asked for it, but he'd hoped that when the business got on its feet and Irv's bookkeeping end covered a wider stretch of it, they might get back together again. Then, of course, business grew worse, Irv's wife got sick and he put even less time in at the office and—

"I feel," he said to himself numbly, "as if I've just found out for certain that there is no Santa Claus. Not Polly, not all those good years! One affair! And the others were just casual things!"

THE telephone circuit went off again. "Who is it?" he snarled.

"Mr. Edward Ballaskia."

"What's he want?" *Not Polly, not Pretty Polly!*

An extreme fat man came on the screen. He looked to right and left cautiously. "I must ask you, Mr. Crandall, if you are positive that this line isn't tapped."

"What the hell do you want?" Crandall found himself wishing that the fat man were here in person. He'd love to sail into somebody right now.

Mr. Edward Ballaskia shook his head disapprovingly, his jowls jiggling slowly behind the rest of his face. "Well, then, sir, if you won't give me you assurances, I am forced to take a chance. I am

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calling, Mr. Crandall, to ask you to forgive your enemies, to turn the other cheek. I am asking you to remember faith, hope and charity — and that the greatest of these is charity. In other words, sir, open your heart to him or her you intended to kill, understand the weaknesses which caused them to give offenses—and forgive them."

"Why should I?'" Crandall demanded.

"Because it is to your profit to do so, sir. Not merely morally profitable—although let us not overlook the life of the spirit—but financially profitable. *Financially* profitable, Mr. Crandall."

"Would you kindly tell me what you are talking about?"

The fat man leaned forward and smiled confidentially. "If you can forgive the person who caused you to go off and suffer seven long, seven *miserable* years of acute discomfort, Mr. Crandall, I am prepared to make you a most attractive offer. You are entitled to commit one murder. I desire to have one murder committed. I am very wealthy. You, I judge—and please take no umbrage, sir—are very poor.

"I can make you comfortable for the rest of your life, extremely comfortable, Mr. Crandall, if only you will put aside your thoughts, your unworthy thoughts, of anger and personal vengeance. I have a business competitor, you see, who has been—"

Crandall turned him off. "Go serve your own seven years," he venomously told the blank screen. Then, suddenly, it was funny. He lay back in the chair and laughed his head off.

That butter-faced old slob! Quoting religious texts at him!

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BUT the call had served a purpose. Somehow it put the scene with Polly in the perspective of ridicule. To think of the woman sitting in her frowsy little apartment, trembling over her dingy affairs of more than ten years ago! To think she was afraid he had bled and battled for seven years because of that!

He thought about it for a moment, then shrugged. "Well, anyway, I bet it did her good."

And now he was hungry.

He thought of having a meal sent up, just to avoid a possible rendezvous with another of Stephanson's ball-throwers, but decided against it. If Stephanson was really hunting him seriously, it would not be much of a job to have something put into the food he was sent. He'd be much safer eating in a restaurant chosen at random.

Besides, a few bright lights, a little gaiety, would be really welcome. This was his first night of freedom—and he had to wash that Polly taste out of his mouth.

He checked the corridor carefully before going out. There was nothing, but the action reminded him of a tiny planet near Vega

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where you made exactly the same precautionary gesture every time you emerged from one of the tunnels formed by the long, parallel lines of moist, carboniferous ferns.

Because if you didn't—well, there was an enormous leechlike mollusc that might be waiting there, a creature which could flip chunks of shell with prodigious force. The shell merely stunned its prey, but stunned it long enough for the leech to get in close.

And that leech could empty a man in ten minutes flat.

Once he'd been hit by a fragment of shell, and while he'd been lying there, Henck— Good old Blotto Otto! Crandall smiled. Was it possible that the two of them would look back on those hideous adventures, one day, with actual nostalgia, the kind of beery, pleasant memories that soldiers develop after even the ugliest of wars? Well, and if they did, they hadn't gone through them for the sake of fat cats like Mr. Edward Ballaskia and his sanctified dreams of evil.

Nor, when you came right down to it, for dismal little frightened trollops like Polly.

Frederick Stoddard Stephanson. Frederick Stoddard—

Somebody put an arm on his shoulder and he came to, realizing that he was halfway through the lobby.

"Nick," said a rather familiar voice.

Crandall squinted at the face at the end of the arm. That slight, pointed beard—he didn't know anyone with a beard like that, but the eyes looked so terribly familiar . . . .

"Nick," said the man with the beard. "I couldn't do it."

THOSE eyes—of course, it was his younger brother!

"Dan!" he shouted.

"It's me all right. Here." Something clattered to the floor. Crandall looked down and saw a blaster lying on the rug, a larger and much more expensive blaster than the one he was carrying. *Why was Dan toting a blaster? Who was after Dan?*

With the thought, there came half-understanding. And there was fear—fear of the words that might come pouring out of the mouth of a brother whom he had not seen for all these years . . .

"I could have killed you from the moment you walked into the lobby," Dan was saying. "You weren't out of the sights for a second. But I want you to know, Nick, that the post-criminal sentence wasn't the reason I froze on the firing button."

"No?" Crandall asked in a breath that was exhaled slowly through a retroactive lifetime.

"I just couldn't stand adding

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any more guilt about you. Ever since that business with Polly—"

"With Polly. Yes, of course, with Polly." Something seemed to hang like a weight from the point of his jaw; it pulled his head down and his mouth open. "With Polly. That business with Polly."

Dan punched his fist into an open palm twice. "I knew you'd come looking for me sooner or later. I almost went crazy waiting —and I did go nearly crazy with guilt. But I never figured you'd do it this way, Nick. Seven years to wait for you to come back!"

"That's why you never wrote to me, Dan?"

"What did I have to say? What *is* there to say? I thought I loved her, but I found out what I meant to her as soon as she was divorced. I guess I always wanted what was yours because you were my older brother, Nick. That's the only excuse I can offer and I know exactly what it's worth. Because I know what you and Polly had together, what I broke up as a kind of big practical joke. But one thing, Nick: I won't kill you and I won't defend myself. I'm too tired. I'm too guilty. You know where to find me. Anytime, Nick."

He turned and strode rapidly through the lobby, the metal spangles that were this year's high masculine fashion glittering on his calves. He didn't look back, even when he was walking past the other side of the clear plastic that enclosed the lobby.

Crandall watched him go, then said "Hm" to himself in a lonely kind of way. He reached down, retrieved the other blaster and went out to find a restaurant.

AS he sat, poking around in the spiced Venusian food that wasn't one-tenth as good as he had remembered it, he kept thinking about Polly and Dan. The incidents—he could remember incidents galore, now that he had a couple of pegs on which to hang them. To think he'd never suspected—but who could suspect Polly, who could suspect Dan?

He pulled the prison discharge out of his pocket and studied it. *Having duly served a maximum penal sentence of seven years, discounted from fourteen years, Nicholas Crandall is herewith discharged in a pre-criminal status—*

—to murder his ex-wife, Polly Crandall?

—to murder his younger brother, Daniel Crandall?

Ridiculous!

But they hadn't found it so ridiculous. Both of them, so blissfully secure in their guilt, so egotistically certain that they and they alone were the objects of a hatred intense enough to endure the worst that the Galaxy had to offer in order to attain

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vengeance—why, they had both been so positive that their normal and already demonstrated cunning had deserted them and they had completely misread the warmth in his eyes! Either one could have switched confessions in mid-explanation. If they had only not been so preoccupied with self and had noted his astonishment in time, either or both of them could still be deceiving him!

Out of the corner of his eye, he saw that a woman was standing near his table. She had been reading his discharge over his shoulder. He leaned back and took her in while she stood and smiled at him.

She had everything a woman needs for great beauty—figure, facial structure, complexion, carriage, eyes, hair, all these to perfection—but she had those other final touches that make the difference between a mere beauty and a work of art. Those final touches included such things as sufficient wealth to create the ultimate setting in coiffure and gown, as well as the single Saturnian paeaea stone glowing in priceless black splendor between her breasts. Those final touches included the look of feminine intelligence in her large eyes, and the overbred, overindulged, overspoiled quality that chilled while attracting desire.

"May I sit with you, Mr. Crandall?" she asked in a voice of which no more could be said than that it fitted the rest of her.

SOMEWHAT amused, but more exhilarated than amused, he slid over on the restaurant couch. She sat down like an empress taking her throne before the eyes of a hundred tributary kings.

Crandall knew, within approximate limits, who she was and what she wanted. She was either a reigning post-debutante from the highest social circles in the System, or a theatrical star newly arrived and still in a state of nova.

And he, as a just-discharged convict, with the power of life and death in his hands, represented a taste she had not yet been able to indulge but was determined to enjoy.

Well, in a sense it wasn't flattering, but a woman like this could only fall to the lot of an ordinary man in very exceptional circumstances; he might as well take advantage of his status. He would satisfy her whim, while she, on his first night of freedom—

"That's your discharge, isn't it?" she asked and looked at it again. There was a moist beading on her upper lip as she avidly studied it—what a strange, sati-

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ated animal for one so splendidly young!

"Tell me, Mr. Crandall," she asked at last, turning to him with the wet pinpoints above her lip more brilliant than ever. "You've served a pre-criminal sentence for murder. It is true, is it not, that the punishment for murder and the most brutal, degraded rape imaginable are exactly the same?"

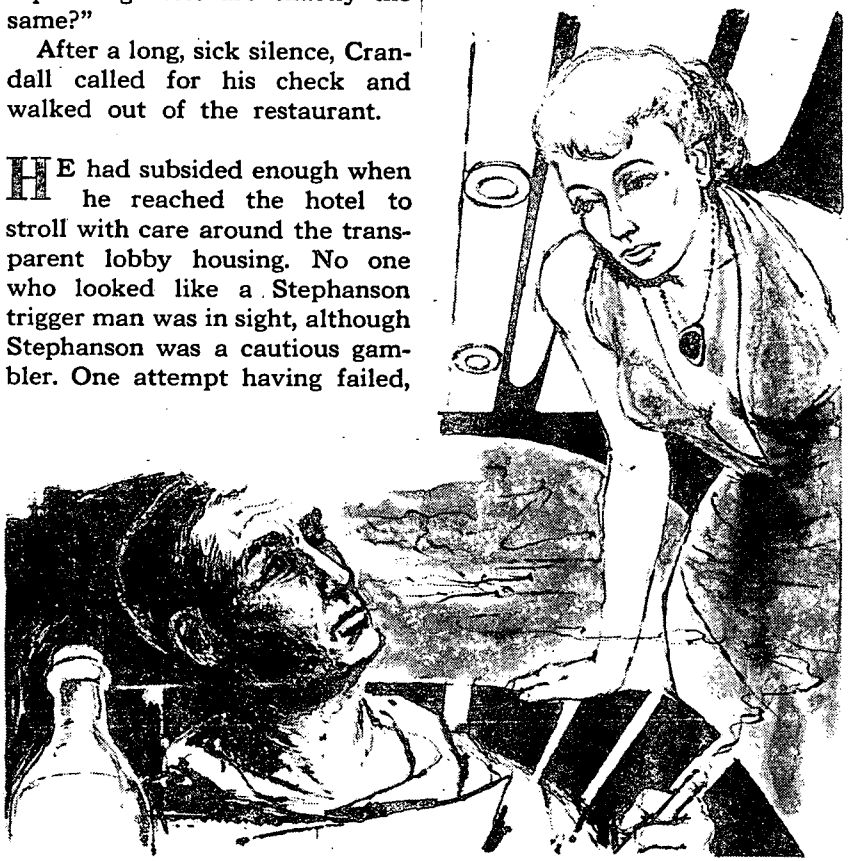
After a long, sick silence, Crandall called for his check and walked out of the restaurant.

HE had subsided enough when he reached the hotel to stroll with care around the transparent lobby housing. No one who looked like a Stephanson trigger man was in sight, although Stephanson was a cautious gambler. One attempt having failed, he'd be unlikely to try another for some time.

But that girl! And Edward Ballaskia!

There was a message in his box. Someone had called, leaving only a number to be called back.

Now what? he wondered as he went back up to his room. Stephanson making overtures? Or



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some unhappy mother wanting him to murder her incurable child?

HE GAVE the number to the set and sat down to watch the screen with a good deal of curiosity.

It flickered—a face took shape on it. Crandall barely restrained a cry of delight. He did have a friend in this city from pre-convict days. Good old dependable, plodding, realistic Irv. His old partner.

And then, just as he was about to shout an enthusiastic greeting, he locked it inside his mouth. Too many things had happened today. And there was something about the expression on Irv's face . . .

"Listen, Nick," Irv said heavily at last. "I just want to ask you one question."

"What's that, Irv?" Crandall kept himself rock-steady.

"How long have you known? When did you find out?"

Crandall ran through several possible answers in his mind, finally selecting one. "A long time now, Irv. I just wasn't in a position to do anything about it."

Irv nodded. "That's what I thought. Well, listen, I'm not going to plead with you. I know that after seven years of what you've gone through, pleading isn't going to do me any good. But, believe me or not, I didn't start dipping into the till very much until my wife got sick. My personal funds were exhausted. I couldn't borrow any more, and you were too busy with your own domestic troubles to be bothered. Then, when business started to get better, I wanted to prevent a sudden large discrepancy on the books.

"So I continued milking the business, not for hospital expenses any more and not to deceive you, Nick — really! — but just so you wouldn't find out how much I'd taken from it before. When you came to me and said you were completely discouraged and wanted out—well, there I'll admit I was a louse. I should have told you. But after all, we hadn't been doing too well as partners and I saw a chance to get the whole business in my name and on its feet, so I—I—"

"So you bought me out for three hundred and twenty credits," Crandall finished for him. "How much is the firm worth now, Irv?"

The other man averted his eyes. "Close to a million. But listen, Nick, business has been terrific this past year in the wholesale line. I didn't cheat you out of all that! Listen, Nick—"

Crandall blew a snort of grim amusement through his nostrils. "What is it, Irv?"

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IRV drew out a clean tissue and wiped his forehead. "Nick," he said, leaning forward and trying hard to smile winningly. "Listen to me, Nick! You forget about it, you stop hunting me down, and I've got a proposition for you. I need a man with your technical know-how in top management. I'll give you a twenty per cent interest in the business, Nick — no, make it twenty-five per cent. Look, I'll go as high as thirty per cent—thirty-*five* per cent—"

"Do you think that would make up for those seven years?"

Irv waved trembling, conciliatory hands. "No, of course not, Nick. Nothing would. But listen, Nick. I'll make it forty-five per—"

Crandall shut him off. He sat for a while, then got up and walked around the room. He stopped and examined his blasters, the one he'd purchased earlier and the one he'd gotten from Dan. He took out his prison discharge and read it through carefully. Then he shoved it back into the tunic pocket.

He notified the switchboard that he wanted a long-distance Earthside call put through.

"Yes, sir. But there's a gentleman to see you, sir. A Mr. Otto Henck."

"Send him up. And put the call in on my screen as soon as it goes through, please, Miss."

A few moments later, Blotto Otto entered his room. He was drunk, but carried it, as he always did, remarkably well.

"What do you think, Nick? What the hell do you—"

"Sh-h-h," Crandall warned him. "My call's coming in."

The Tibetan operator said, "Go ahead, New York," and Frederick Stoddard Stephanson appeared on the screen. The man had aged more than any of the others Crandall had seen tonight. Although you never could tell with Stephanson: he always looked older when he was working out a complex deal.

STEPHANSON didn't say anything; he merely pursed his lips at Crandall and waited. Behind him and around him was a TV Spectacular's idea of a hunting lodge.

"All right, Freddy," Crandall said. "What I have to say won't take long. You might as well call off your dogs and stop taking chances trying to kill and/or injure me. As of this moment, I don't even have a grudge against you."

"You don't even have a grudge—" Stephanson gasped, in spite of his rigid self-control. "Why not?"

"Because — oh, because a lot of things. Because killing you

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just wouldn't be seven hellish years of satisfaction, now that I'm face-to-face with it. And because you didn't do any more to me than practically everybody else has done—from the cradle, for all I know. Because I've decided I'm a natural born sucker: that's just the way I'm constructed. All you did was take your kind of advantage of my kind of construction."

Stephanson leaned forward, peered intently, then relaxed and crossed his arms. "You're actually telling the truth!"

"Of course I'm telling the truth! You see these?" He held up the two blasters. "I'm getting rid of these tonight. From now on, I'll be unarmed. I don't want to have the least thing to do with weighing human life in the balance."

The other man ran an index nail under a thumb nail thoughtfully a couple of times. "I'll tell you what," he said. "If you mean what you say—and I think you do—maybe we can work out something. An arrangement, say, to repay you a bit for what you went through out there. I'd like to, but it's really up to you whether I can. We'll see."

"When you don't have to?" Crandall was astonished. "But why didn't you make me an offer before this?"

"Because you'd have thought I was trying to buy you off. I'd protect myself, yes, but I wouldn't bribe you to spare my life."

Crandall considered the point. "I don't get it. But maybe that's the way you're constructed. Well, we'll see, as you said."

When he rose to face Henck, the little man was still shaking his head slowly, dazedly, intent only on his own problem. "What do you think, Nick? Elsa went on a sightseeing jaunt to the Moon last month. The line to her oxygen helmet got clogged, see, and she died of suffocation before they could do anything about it. Isn't that a *hell* of thing, Nick? One month before I finish my sentence — she couldn't wait one lousy little month! I bet she died laughing at me!"

CRANDALL put his arm around him. "Let's go out for a walk, Blotto Otto. We both need the exercise."

Funny how the capacity for murder affected people, he thought. There was Polly's way —and Dan's. There was old Irv bargaining frantically but still shrewdly for his life. Mr. Edward Ballaskia—and that girl in the restaurant. And there was Freddy Stephanson, the only intended victim—and the only one who wouldn't beg.

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He wouldn't beg, but he might be willing to hand out largesse. Could Crandall accept what amounted to charity from Stephanson? He shrugged. Who knew what he or anyone else could or could not do?

"What do we do now, Nick?" Blotto Otto was demanding petulantly once they got outside the hotel. "That's what I want to know—what do we do?"

"Well, I'm going to do this," Crandall told him, taking a blaster in each hand. "Just this." He threw the gleaming weapons, right hand, left hand, at the transparent window walls that ran around the luxurious lobby of the Ritz-Capricorn. They struck *thunk* and then *thunk* again. The windows crashed down in long, pointed daggers. The people in the lobby swung around with their mouths open.

A policeman ran up, his badge jingling against his metallic uniform. He seized Crandall.

"I saw you! I saw you do that! You'll get thirty days for it!"

"Hm," said Crandall. "Thirty days?" He pulled his prison discharge out of his pocket and handed it to the policeman. "I tell you what we'll do, officer—Just punch the proper number of holes in this document or tear off what seems to you a proportionately sized coupon. Either or both. Handle it any way you like."

—WILLIAM TENN

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Honorable Opponent

By CLIFFORD D. SIMAK

No general ever had a worse assignment . . . to be dignified with Earth's conquerors . . . a race of unmilitary clowns!

Illustrated by DICK FRANCIS

THE Fivers were late.

Perhaps they had misunderstood.

Or this might be another of their tricks.

Or maybe they never had intended to stick to their agreement.

"Captain," asked General Lyman Flood, "what time have we got now?"

Captain Gist looked up from the chessboard. "Thirty-seven oh eight, galactic, sir."

Then he went back to the board again. Sergeant Conrad

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had pinned his knight and he didn't like it.

"Thirteen hours late!" the general fumed.

"They may not have got it straight, sir."

"We spelled it out to them. We took them by the hand and we went over it time and time again so they'd have it clear in mind. They couldn't possibly misunderstand."

But they very possibly could, he knew.

The Fivers misunderstood almost everything. They had been confused about the armistice — as if they'd never heard of an armistice before. They had been obtuse about the prisoner exchange. Even the matter of setting a simple time had involved excruciating explanation — as if they had never heard of the measurement of time and were completely innocent of basic mathematics.

"Or maybe they broke down," the captain offered.

The general snorted. "They don't break down. Those ships of theirs are marvels. They'd live through anything. They whipped us, didn't they?"

"Yes, sir," said the captain.

"How many of them, Captain, do you estimate we destroyed?"

"Not more than a dozen, sir."

"They're tough," the general said.

HE WENT back across the tent and sat down in a chair.

The captain had been wrong. The right number was eleven. And of those, only one had been confirmed destroyed. The others had been no better than put out of action.

And the way it figured out, the margin had been more than ten to one in favor of the Fivers. Earth, the general admitted to himself, had never taken such a beating. Whole squadrons had been wiped out; others had come fleeing back to Base with their numbers cut in half.

They came fleeing back to Base and there were no cripples. They had returned without a scratch upon them. And the ships that had been lost had not been visibly destroyed — they had simply been wiped out, leaving not a molecule of wreckage.

How do you beat a thing like that, he asked himself. How do you fight a weapon that cancels out a ship in its entirety?

Back on Earth and on hundreds of other planets in the Galactic Confederacy, thousands of researchers were working day and night in a crash-priority program to find an answer to the weapon — or at least to find the weapon.

But the chance of success ran thin, the general knew, for there

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was not a single clue to the nature of it. Which was understandable, since every victim of the weapon had been lost irretrievably.

Perhaps some of the human prisoners would be able to provide a clue. If there had been no such hope, he knew, Earth never would have gone to all the trouble to make this prisoner exchange.

He watched the captain and the sergeant hunched above the chessboard, with the captive Fiver looking on.

He called the captive over.

The captive came, like a trundling roly-poly.

And once again, watching him, the general had that strange, disturbing sense of outrage.

For the Fiver was a droll grotesque that held no hint of the martial spirit. He was round and jolly in every feature, expression and gesture, dressed in a ribald clash of colors, as though designed and clad deliberately to offend any military man.

"Your friends are late," the general told him.

"You wait," the Fiver said and his words were more like whistling than talk. One had to listen closely to make out what he said.

The general held himself in check.

No use in arguing.

No point blowing up.

He wondered if he—or the human race—would ever understand the Fivers.

Not that anyone really wanted to, of course. Just to get them combed out of Earth's hair would be enough.

"You wait," the Fiver whistled. "They come in middle time from now."

And when in hell, the general wondered, would be a middle time from now?

The Fiver glided back to watch the game.

The general walked outside.

THE tiny planet looked colder and more desolate and forbidding than it ever had before. Each time he looked at it, the general thought, the scene was more depressing than he had remembered it.

Lifeless, worthless, of no strategic or economic value, it had qualified quite admirably as neutral territory to carry out the prisoner exchange. Neutral mostly because it wasn't worth the trouble for anyone to grab it.

The distant star that was its sun was a dim glow in the sky. The black and naked rock crept out to a near horizon. The icy air was like a knife inside the general's nostrils.

There were no hills or valleys. There was absolutely nothing—

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just the smooth flatness of the rock stretching on all sides, for all the world like a great space-field.

It had been the Fivers, the general remembered, who had suggested this particular planet and that in itself was enough to make it suspect. But Earth, at that point in the negotiations, had been in no position to do much haggling.

He stood with his shoulders hunched and he felt the cold breath of apprehension blowing down his neck. With each passing hour, it seemed, the place felt more and more like some gigantic trap.

But he must be wrong, he argued. There was absolutely nothing in the Fivers' attitude to make him feel like that. They had, in fact, been almost magnanimous. They could have laid down their terms — almost any terms — and the Confederacy would have had no choice but to acquiesce. For Earth must buy time, no matter what the price. Earth had to be ready next time —five years or ten or whatever it might be.

But the Fivers had made no demands, which was unthinkable.

Except, the general told himself, one could never know what they might be thinking or what they might be planning.

The exchange camp huddled in the dimness—a few tents, a portable power plant, the poised and waiting ship and, beside it, the little scouter the captive Fiver had been piloting.

The scouter in itself was a good example of the gulf which separated the Fivers and the humans. It had taken three full days of bickering before the Fivers had been able to make clear their point that the scouter as well as its pilot must be returned to them.

No ship in all the Galaxy had ever gotten so thorough a study as that tiny craft. But the facts that it had yielded had been few indeed. And the captive Fiver, despite the best efforts of the experts in Psych, had furnished even fewer.

The area was quiet and almost deserted. Two sentries strode briskly up and down. Everyone else was under cover, killing time, waiting for the Fivers.

The general walked quickly across the area to the medic tent. He stooped and went inside.

FOUR men were sitting at a table, drearily playing cards. One of them put down his hand and rose.

"Any word, General?"

The general shook his head. "They should be coming soon, Doc. Everything all set?"

"We've been ready for some

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time," said the psychiatrist. "We'll bring the boys in here and check them over as soon as they arrive. We've got the stuff all set. It won't take us long."

"That's fine. I want to get off this rock as quickly as I can. I don't like the feel of it."

"There's just one thing . . ."

"What's that?"

"If we only knew how many they are handing back?"

The general shook his head. "We never could find out. They're not so hot on figures. And you'd think, wouldn't you, that math would be universal?"

"Well," said Doc resignedly, "we'll do the best we can."

"There can't be many," the general said. "We're only giving back one Fiver and one ship. How many humans do you figure a ship is worth to them?"

"I wouldn't know. You really think they'll come?"

"It's hard to be certain that they understood. When it comes to sheer stupidity—"

"Not so stupid," Doc replied, quietly. "We couldn't learn their language, so they learned ours."

"I know," the general said impatiently. "I realize all that. But that armistice business—it took days for them to get what we were driving at. And the time reckoning system still more days. Good Lord, man, you could do better using sign language with a Stone Age savage!"

"You should," said Doc. "The savage would be human."

"But these Fivers are intelligent. Their technology, in many ways, has us beaten seven ways from Sunday. They fought us to a standstill."

"They licked us."

"All right, then, they licked us. And why not? They had this weapon that we didn't have. They were closer to their bases. They had no logistics problem to compare with ours. They licked us, but I ask you, did they have the sense to know it? Did they take advantage of it? They could have wiped us out. They could have laid down peace terms that would have crippled us for centuries. Instead, they let us go. Now how does that make sense?"

"You're dealing with an alien race," said Doc.

"We've dealt with other aliens. And we always understood them. Mostly, we got along with them."

"We dealt with them on a commercial basis," Doc reminded him. "Whatever trouble we might have had with them came after a basic minimum of understanding had been achieved. The Fivers are the first that ever came out shooting."

"I CAN'T figure it," the general said. "We weren't even heading for them. We might have

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passed them by. They couldn't have known who we were. Point is, they didn't care. They just came piling out and opened up on us. And it's been the same with everyone else who came within their reach. They take on every comer. There's never a time when they aren't fighting someone — sometimes two or three at once."

"They have a defensive complex," said Doc. "Want to be left alone. All they aim to do is keep others off their planets. As you say, they could have wiped us out."

"Maybe they get hurt real easy. Don't forget we gave them a bloody nose or two—not as much as they busted us, but we hurt them some. I figure they'll come out again, soon as they can cut in."

He drew a deep breath. "Next time, we have to be ready for them. Next time, they may not stop. We have to dope them out."

It was tough work, he thought, to fight an enemy about which one knew next to nothing. And a weapon about which one knew absolutely nothing.

There were theories in plenty, but the best no more than educated guesses.

The weapon might operate in time—hurling its targets back into unimagined chaos. Or it might be dimensional. Or it might collapse the atoms in upon themselves, reducing a spaceship to the most deadly massive dust-mote the Universe had known.

One thing for certain — it was not disintegration, for there was no flash and there was no heat. The ship just disappeared and that was the end of it — the end and all of it.

"There's another thing that bothers me," said Doc. "Those other races that fought the Fivers before they jumped on us. When we tried to contact them, when we tried to get some help from them, they wouldn't bother with us. They wouldn't tell us anything."

"This is a new sector of space for us," the general said. "We are strangers here."

"It stands to reason," argued Doc, "they should jump at the chance to gang up on the Fivers."

"We can't depend on alliances. We stand alone. It is up to us."

He bent to leave the tent.

"We'll get right on it," said Doc, "soon as the men show up. We'll have a preliminary report within an hour, if they're in any shape at all."

"That's fine," the general said and ducked out of the tent.

It was a bad situation, blind and terrifying if one didn't manage to keep a good grip on himself.

The captive humans might

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bring back some information, but even so, you couldn't buy it blind, for there might be a gimmick in it—as there was a gimmick in what the captive Fiver knew.

THIS time, he told himself, the psych boys might have managed to outsmart themselves.

It had been a clever trick, all right—taking the captive Fiver on that trip and showing him so proudly all the barren, no-good planets, pretending they were the showplaces of the Confederacy.

Clever—if the Fiver had been human. For no human would have fought a skirmish, let alone a war, for the kind of planets he'd been shown.

But the Fiver wasn't human. And there was no way of knowing what kind of planet a Fiver might take a fancy to.

And there always was the chance that those crummy planets had given him the hunch that Earth would be easy prey.

The whole situation didn't track, the general thought. There was a basic wrongness to it. Even allowing for all the differences which might exist between the Fiver and the human cultures, the wrongness still persisted.

And there was something wrong right here.

He heard the sound and wheeled to stare into the sky.

The ship was close and coming in too fast.

But even as he held his breath, it slowed and steadied and came to ground in a perfect landing not more than a quarter of a mile from where the Earth ship stood.

The general broke into a run toward it, then remembered and slowed to a stiff military walk.

Men were tumbling out of tents and forming into lines. An order rang across the area and the lines moved with perfect drill precision.

The general allowed himself a smile. Those boys of his were good. You never caught them napping. If the Fivers had expected to sneak in and catch the camp confused and thus gain a bit of face, it was a horse on them.

The marching men swung briskly down the field. An ambulance moved out from beneath its tarp and followed. The drums began to roll and the bugles sounded clear and crisp in the harsh, cold air.

It was men like these, the general told himself with pride, who held the expanding Confederacy intact. It was men like these who kept the peace across many cubic light-years. It was men like these who some day, God willing, would roll back the Fiver threat.

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There were few wars now. Space was too big for it. There were too many ways to skirt around the edge of war for it to come but seldom. But something like the Fiver threat could not be ignored. Some day, soon or late, either Earth or Fiver must go down to complete defeat. The Confederacy could never feel secure with the Fivers on its flank.

FEET pounded behind him and the general turned. It was Captain Gist, buttoning his tunic as he ran. He fell in beside the general.

"So they finally came, sir."

"Fourteen hours late," the general said. "Let us, for the moment, try to look our best. You missed a button, Captain."

"Sorry, sir," the captain said, fastening the button.

"Right, then. Get those shoulders back. Smartly, if you will. Right, left, hup, hup!"

Out of the corner of his eye, he saw that Sergeant Conrad had his squad moving out with precision, escorting the captive Fiver most correctly forward, with all the dignity and smartness that anyone might wish.

The men were drawn up now in two parallel lines, flanking the ship. The port was swinging open and the ramp was rumbling out and the general noted with some satisfaction that he and Captain Gist would arrive at the foot of the ramp about the time it touched the ground. The timing was dramatic and superb, almost as if he himself had planned it down to the last detail.

The ramp snapped into position and three Fivers came sedately waddling down it.

A seedy-looking trio, the general thought. Not a proper uniform nor a medal among the lot of them.

The general seized the diplomatic initiative as soon as they reached the ground.

"We welcome you," he told them, speaking loudly and slowly and as distinctly as he could so they would understand.

They lined up and stood looking at him and he felt a bit uncomfortable because there was that round jolly expression in their faces. Evidently they didn't have the kind of faces that could assume any other expression. But they kept on looking at him.

The general plunged ahead. "It is a matter of great gratification to Earth to carry out in good faith our obligations as agreed upon in the armistice proceedings. It marks what we sincerely hope will be the beginning of an era . . ."

"Most nice," one of the Fivers said. Whether he meant the general's little speech or the entire situation or was simply trying to

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be gracious was not at once apparent.

UNDAUNTED, the general was ready to go on, but the spokesman Fiver raised a short round arm to halt him.

"Prisoners arrive briefly," he whistled.

"You mean you didn't bring them?"

"They come again," the Fiver said with a glorious disregard for preciseness of expression.

He continued beaming at the general and he made a motion with the arm that might have been a shrug.

"Shennanigans," the captain said, close to the general's ear.

"We talk," the Fiver said.

"They're up to something," warned the captain. "It calls for Situation Red, sir."

"I agree," the general told the captain. "Set it up quietly." He said to the Fiver delegation: "If you gentlemen will come with me, I can offer you refreshments."

He had a feeling that they were smiling at him, mocking him, but one could never tell. Those jolly expressions were always the same. No matter what the situation.

"Most happy," said the Fiver spokesman. "These refresh—"

"Drink," the general said and made a motion to supplement the word.

"Drink is good," the Fiver answered. "Drink is friend?"

"That is right," the general said.

He started for the tent, walking slowly so the Fivers could keep up.

He noted with some satisfaction that the captain had carried on most rapidly, indeed. Corporal Conrad was marching his squad back across the area, with the captive Fiver shambling in the center. The tarps were coming off the guns and the last of the crew was clambering up the ladder of the ship.

The captain caught up with them just short of the tent.

"Everything all set, sir," Corporal Conrad reported in a whisper.

"Fine," the general said.

They reached the tent and went inside. The general opened a refrigerating unit and took out a gallon jug.

"This," he explained, "is a drink we made for your compatriot. He found it very tasty."

He set out glasses and sipping straws and uncorked the jug, wishing he could somehow hold his nose, for the drink smelled like something that had been dead too long. He didn't even like to guess what might have gone into it. The chemists back on Earth had whomped it up for the captive Fiver, who had con-

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sumed gallon after gallon of it with disconcerting gusto.

The general filled the glasses and the Fivers picked them up in their tentacles and stuck the straws into their drawstring mouths. They drank and rolled their eyes in appreciation.

The general took the glass of liquor the captain handed him and gulped half of it in haste. The tent was getting just a little thick. What things a man goes through, he thought, to serve his planets and his peoples.

HE WATCHED the Fivers drinking and wondered what they might have up their sleeves.

Talk, the spokesman had told him, and that might mean almost anything. It might mean a reopening of negotiations or it might be nothing but a stall.

And if it was a negotiation, Earth was across the barrel. For there was nothing he could do but negotiate. Earth's fleet was crippled and the Fivers had the weapon and a renewal of the war was unthinkable. Earth needed five years at the minimum and ten years would be still better.

And if it was attack, if this planet was a trap, there was only one thing he could do — stand and fight as best he could, a thoroughly suicidal course.

Either way, Earth lost, the general realized.

The Fivers put down their glasses and he filled them up again.

"You do well," one of the Fivers said. "You got the paper and the marker?"

"Marker?" the general asked.

"He means a pencil," said the captain.

"Oh, yes. Right here." The general reached for a pad of paper and a pencil and laid them on the desk.

One of the Fivers set down his glass and, picking up the pencil, started to make a laborious drawing. He looked for all the world like a five-year-old printing his first alphabet.

They waited while the Fiver drew. Finally he was finished. He laid the pencil down and pointed to the wiggly lines.

"Us," he said.

He pointed to the sawtooth lines.

"You," he told the general.

The general bent above the paper, trying to make out what the Fiver had put down.

"Sir," the captain said, "it looks like a battle diagram."

"Is," said the Fiver proudly.

He picked the pencil up.

"Look," he said.

He drew directional lines and made a funny kind of symbol for the points of contact and made

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crosses for the sections where the battle lines were broken. When he was done, the Earth fleet had been shattered and sliced into three segments and was in headlong flight.

"That," the general said, with the husk of anger rising in his throat, "was the engagement in Sector 17. Half of our Fifth Squadron was wiped out that day."

"Small error," said the Fiver and made a deprecatory gesture.

He ripped the sheet of paper off the pad and tossed it on the floor. He laboriously drew the diagram again.

"Attend," he said.

THE Fiver drew the directional lines again, but this time he changed them slightly. Now the Earth line pivoted and broke and became two parallel lines that flanked the Fiver drive and turned and blunted it and scattered it in space.

The Fiver laid the pencil down.

"Small matter," he informed the general and the captain. "You good. You make one thin mistake."

Holding himself sternly in hand, the general filled the glasses once again.

What are they getting at, he thought. Why don't they come flat out and say it?

"So best," one of the Fivers said, lifting his glass to let them know that he meant the drink.

"More?" asked the Fiver tactician, picking up the pencil.

"Please," said the general, seething.

He walked to the tent flap and looked outside. The men were at the guns. Thin wisps of vapor curled from the ship's launching tubes; in just a little while, it would be set to go, should the need arise. The camp was quiet and tense.

He went back to the desk and watched as the Fiver went on gaily with his lesson on how to win a battle. He filled page after page with diagrams and occasionally he was generous — he sometimes showed how the Fivers lost when they might have won with slightly different tactics.

"Interesting!" he piped enthusiastically.

"I find it so," the general said. "There is just one question."

"Ask," the Fiver invited.

"If we should go to war again, how can you be sure we won't use all of this against you?"

"But fine," the Fiver enthused warmly. "Exactly as we want."

"You fight fine," another Fiver said. "But just too slightly hard. Next time, you able to do much better."

"Hard!" the general raged.

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"Too roughly, sir. No need to make the ship go poof."

Outside the tent, a gun cut loose and then another one and above the hammering of the guns came the full-throated, ground-shaking roar of many ship motors.

The general leaped for the entrance, went through it at a run, not bothering with the flap. His cap fell off and he staggered out, thrown slightly off his balance. He jerked up his head and saw them coming in, squadron after squadron, painting the darkness with the flare of tubes.

"STOP FIRING!" he shouted. "You crazy fools, stop firing!"

But there was no need of shouting, for the guns had fallen silent.

The ships came down toward the camp in perfect flight formation. They swept across it and the thunder of their motors seemed to lift it for a moment and give it a mighty shake. Then they were climbing, rank on serried rank, still with drill precision — climbing and jockeying into position for regulation landing.

The general stood like a frozen man, with the wind ruffling his iron-gray hair, with a lump, half pride, half thankfulness, rising in his throat.

Something touched his elbow.

"Prisoners," said the Fiver. "I told you bye and bye."

The general tried to speak, but the lump was there to stop him. He swallowed it and tried once again.

"We didn't understand," he said.

"You did not have a taker," said the Fiver. "That why you fight so rough."

"We couldn't help it," the general told him. "We didn't know. We never fought this way before."

"We give you takers," said the Fiver. "Next time, we play it right. You do much better with the takers. It easier on us."

No wonder, the general thought, they didn't know about an armistice. No wonder they were confused about the negotiations and the prisoner exchange. Negotiations are not customarily needed to hand back the pieces one has won in a game.

And no wonder those other races had viewed with scorn and loathing Earth's proposal to gang up on the Fivers.

"An unsporting thing to do," the general said aloud. "They could have told us. Or maybe they were so used to it."

And now he understood why the Fivers had picked this planet. There had to be a place where all the ships could land.

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HE STOOD and watched the landing ships mushing down upon the rock in clouds of pinkish flame. He tried to count them, but he became confused, although he knew every ship Earth had lost would be accounted for.

"We give you takers," said the Fiver. "We teach you how to use. They easy operate. They never hurt people or ships."

And there was more to it, the general told himself, than just a silly game — though maybe not so silly, once one understood the history and the cultural background and the philosophic concepts that were tied into it. And this much one could say for it: It was better than fighting actual wars.

But with the takers, there would be an end of war. What little war was left would be ended once for all. No longer would an enemy need to be defeated; he could be be simply taken. No longer would there be years of guerrilla fighting on newly settled planets; the aborigines could be picked up and deposited in cultural reservations and the dangerous fauna shunted into zoos.

"We fight again?" the Fiver asked with some anxiety.

"Certainly," said the general. "Any time you say. Are we really as good as you claim?"

"You not so hot," the Fiver admitted with disarming candor. "But you the best we ever find. Play plenty, you get better."

The general grinned. Just like the sergeant and the captain and their eternal chess, he thought.

He turned and tapped the Fiver on the shoulder.

"Let's get back," he said. "There's still some drinking in that jug. We mustn't let it go to waste."

—CLIFFORD D. SIMAK

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This way to the Regress

By DAMON KNIGHT

No, Sullivan didn't have a great future behind him . . . he had a great past ahead!

Illustrated by WES

HE remembered the rain and the glare of auto headlights all around him. He could see nothing more, but he knew Emily was lying nearby, covered by someone's overcoat, not moving. It was painful, being born like this — a white knife, piercing him with each breath. All that drifted out of reach.

When he woke again, they were both in the car, whirling violently back from the grinding clash of a collision. The other car receded; its headlamps finally turned to a dim glow on the far side of the hill and vanished. The road reeled back silently, smoothly.

Sullivan watched the stars wheel through the night as he drove.

He was tired and at peace,

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wanting nothing, accepting everything with a quiet wonder.

How strange and wonderful it all was, entering his home for the first time — five beautifully furnished rooms, just right for Emily and himself. The books with their leather and cloth bindings! The pictures, the boxes of cigars, the wardrobes and dressers full of rich, dark clothing cut to his measure! Life, thought Laurence Wallace Sullivan, was good.

That morning before the fire, his hand took a comfortably worn leather volume from the shelves and opened it to a thumb-marked page.

Time's graven footsteps
in the sands
Behind us, if we but
approach,
Sublime our own lives
we can make.
Remind us, lives of all
great men!

Wonderful words . . . . He glanced at his watch. The sky outside his study window was lightening from deep azure to robin's egg, faintly green over the skeletal forest of antennas. He felt stuffed; it was time for dinner.

He replaced the book on its shelf and strolled into the dining room, sighing and stretching.

THE FIRM of Sullivan and Gaynor, he found, operated an unprinting plant that filled a three-story building on Vesey Street. The enormous machines devoured every kind of printed matter and turned it into neat rolls of paper, cans of ink, metal ingots. Their operation was far too complex for Sullivan to understand fully and he did not try, contenting himself with the correspondence and the financial reports that flowed across his desk. Gaynor, his partner, spent more time in the plant — a red-faced, dyspeptic man with a raucous voice.

Nevertheless, Sullivan flattered himself that he understood the romance of his business: Words, words from all over the world streamed into this building in nature's senseless profusion — words endlessly repeated, words plucked from dead fires and from trashcans, to be carefully unprinted and reduced to one copy only of each sermon, pamphlet, book, advertising leaflet. Like arrow-shapes, fan-shapes of floating paper, each found its way unerringly to the one man for whom it was meant. Sullivan (in his humble way, of course) was a public servant, a guardian of regress.

The swift years went by. Summers, on Cape Cod, Sullivan began to feel a strange discontent,

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listening to the curlews piping on the sands, or watching a sudden evening squall carry water in gray pencil-marks up from the sea. In his lips, each pale Havana cigar prolonged itself behind its inch-long ash, until at last it rounded itself off, and he drew the flame, capped the cigar with his silver knife, and put it away carefully in the humidor.

Emily's hair was darkening; they talked more now, and quarreled more. Sometimes she looked strangely at him. Where was it all heading? What was life for?

He was fifty-two when he discovered sex with Emily — a brief and unsatisfactory experience, not soon repeated. Two years later, he met Peggy.

It was in an apartment house in the fifties, where he had never been before. The door opened as he turned to it one afternoon and she slapped his face, hard. Then they were inside, glaring at each other, breathing heavily. Sullivan felt a fury for her that was all mingled with disgust and satiated desire.

AFTER PEGGY came Alice, and after Alice there was Connie. That was in 1942; Sullivan was forty-seven, in the prime of his vigor.

In that year, the stranger who was his son came home from Italy. Robert had just been discharged from the Army; he called himself R. Gaynor Sullivan at first, was gawky and insolent, but after he enrolled in college, things went better. Then, in a surprisingly short time, he was home again and the apartment was not big enough.

They moved to a house in Long Island City — more confusion, and Sullivan's relations with his wife were strained. He was working too hard; the firm's business was booming, due partly to a heavy lump-sum repayment to Emily's father.

Each month, the check stubs. Money poured into the account from grocer, dentist, doctors . . . he was always hard pressed to pay enough other people to keep it stabilized.

In the evenings, his familiar face stared back at him from the mirror, haggard and gray. His fingers rubbed the smooth cheek; the razor came riding diagonally up with a crisp sound, trailing lather and making the bristles sprout behind it. Then the warm brush to remove the lather, and the same face, with its beard restored. What if he should leave it smooth some day? But he didn't want to be conspicuous.

The firm had moved several times, finally settling in a loft on Bleeker Street. Their operations had simplified; more and more employees had left, until Sullivan,

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Gaynor and three unprinters were running the place themselves.

Sullivan often took a hand at the job press; once you had learned the trick of it, there was a soothing, almost hypnotic quality in the rhythm that flicked a blank page from the platen and slapped a printed on in to be erased, all in the acrobatic moment of safety when the metal jaws gaped.

Gaynor was a much more likable fellow these days; Sullivan's days at work were filled with pleasure, as his nights were at home. The boy had grown incredibly dear to him and he was in love with Emily. He had never, Sullivan thought, been so happy.

THE LAST vouchers had been filled, the final entries had been erased from the ledgers, the workmen were unbolting the presses and dismantling them to be carried away. There was nothing more to do but to shake hands on it and go their separate ways. He and Gaynor ceremonially locked the door together and adjourned to the bar downstairs, feeling a premonitory glow.

"Here's to success!"

"Maybe now that this fella Roosevelt is going out, we'll see some changes."

They clinked their glasses solemnly, set them down on the waitress's tray and, sobered, left. Gaynor was going back to Minneapolis, where he had a job as foreman of an unprinting plant. Sullivan himself was going to have to hunt for a while before he found a job as assistant to a paper broker. But not for long; the Boom was coming up in a few years.

* * *

Sullivan uncrumpled the *Sun*, relishing the heavy feel of the gray pages. "That woman is out of office in Texas," he announced, adding "Good riddance!" Yes, that was what the headline said. Women governors — what was the world coming to?

Emily, unfolding diapers, did not seem to hear. She was losing her figure again; she seemed pale, tired and listless. Little Robert was grunting in his cradle; he had shrunk to a fat handful, more animal than baby. He slept nearly all the time, when he was not howling or further distending Emily's swollen breasts.

Life was a queer business. In another month, it would be time to take them both to the hospital and only Emily would be coming home. That was funny; he had loved the child and he took an affectionate interest in it even now, but it would be almost a relief to get rid of it. Afterward, it would be a good six months before Emily got her figure back.

She glanced at him sidelong.

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She was still a lovely woman, but what did she secretly think of him? What was it really all about?

THE MINISTER'S voice droned in his ears. Emily, looking more beautiful than he had ever seen her, gently moved out of his embrace. He took the ring from her finger and handed it to Bob.

"I divorce thee with this ring," he said.

Later, they went out together, many times. At a party one morning, a polite stranger led him up to her and said, "Emily, I want you to say good-by to Larry Sullivan." They looked across a gulf; her fingers were cool in his and he knew he would never see her again.

From that day on, there was an emptiness in his life. He tried to fill it with amusements — too much liquor, too much music. He met girls and kissed them, took them on dates, but he missed his wife. It was hard to get used to, living alone after all those years together.

Still, life had its compensations. There was an endless interest in watching the changes the years brought, seeing it all work out.

Automobiles lost all trace of their former streamlines, became elegantly spare or even boxy, hinting at the victorias and broughams to come. There were fewer machines on the streets and fewer people; the air was purer. Garbo replaced Grable on the silver screen. Abruptly, then, the movies ceased to talk. The incomparable Chaplin came into his own; the Keystone cops grew famous.

Sullivan watched it all with fascinated eyes. Technological regress was certainly a wonderful thing! And yet sometimes Sullivan found himself thinking nostalgically of the old blaring, bustling days.

Luckily, there was still the War to come. Europe was rousing from her long sleep and, to the east, holy Russia was being born.

SULLIVAN nervously fingered the scar on his chin. He was due to go to field hospital with it, he judged — it was tight and raw-feeling and itched. It was the worst scar he had, puckered and stretching halfway up his shin-bone; he would be glad to get rid of it and go on to the front. War was not much like the movies, so far.

He walked out of the barracks tent into the sunlight, helping himself along with his cane. There were a lot of other casualties; he supposed this must be the prelude of the big battle of the Argonne that he had read about

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in the prophecies. That would be where his number came up. What would it be — a mortar shell, or hand-to-hand — or even something anticlimatic, like falling over a tent rope in the dark?

He wished the time would come, so he could get it over with.

* * *

He met his father, briefly, when he came home from France. The old man was very gray and shaky, and they did not seem to have much in common. It was a relief on both sides when Sullivan went off to Cornell.

He was enrolled as a senior, which meant he had to go the full four years. Sullivan did not mind that; the years you spent in college were the most important ones of your life. Here everything you had thought and read, all you knew, all you had been, poured out of you and funneled down to the instructee of that particular class. Then the instructee would sum it all up in one of his lectures, dry or brilliant according to who it was, and eventually the essence of it would get into the ultimate copy of a textbook, to be absorbed by the author and so returned to nature, used up, got rid of.

In the spring, Sullivan went out for football. He was registered in the athletic prediction books as playing two full seasons on the 'varsity. The books did not say so, but probably that was where he was going to get rid of the crook in his nose.

Professor Toohey was an old duck who took a fancy to Sullivan before he had been in college a year. They used to spout beer, down in Toohey's dark cellar, where he kept a keg for it, and talk philosophy. "There's something to think about," Toohey might begin, circling up to a subject they had discussed before. "How can we tell? The reverse sequence of causation may be just as valid as the one we are experiencing. Cause and effect are arbitrary, after all."

"But it sounds pretty far-fetched," Sullivan would say cautiously.

"It's hard for us to imagine, just because we're not used to it. It's only a matter of viewpoint. Water would run downhill, and so on. Energy would flow the other way — from total concentration to total dispersion. Why not?"

WHEN Sullivan tried to visualize that peculiar world, it gave him a half-pleasant shudder. Imagine never knowing the date of your death. "Everything would be backward. If you meant 'catch,' you'd have have to say 'throw.' All the words would have to mean different things — all

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the verbs that express duration, anyway. There are difficulties to it."

"It all makes perfectly good sense in its own terms," stated Profesor Toohey. "Friction would be a factor to be subtracted from energy calculation, not added. And so on. The Universe would be expanding; we'd heat our houses with furnaces instead of cooling them. Grass would grow out of seeds. And there'd be no increting and exgesting as we do."

Sullivan grinned. "You mean the older we got, the more wrinkled and decrepit we'd be?"

"Think about it for a minute. It would seem perfectly natural. We might live backward, death to birth, and never know the difference. Which came first, the chicken or the egg? Do wars cause armies, or armies wars? What do we mean by causation, anyway? Think about it."

"Hmmm."

And the formal end-question: "Sullivan, what do you think about the principle of causation?"

He wished he knew.

* * *

The world was growing larger and brighter, now that he was ten. Sullivan had a furious energy that drove him out of doors all day in good weather. Even in winter, he stood about, watching the freezing ground water rush up the drainspout, or letting the snow form on his head and shoulders, drifting up into the white sky as it did from the ground on which he stood.

Whatever came, he took without question. If his fingers and nose were bright pink with cold when he went out, the snow would warm them. If he awoke with a black eye, a friend would heal it with his fist.

Sullivan climbed his friends' backs and leaped off, and they his, with peals of cracked idiot laughter. They fidgeted in class, made comical faces at one another from behind books, swarmed yelling uphill and down again. For repletion, there was mealtime, and time was the cure for hunger.

The hardest thing was that Mrs. Hastings would not let him out of bed when he awoke early in the morning, though any fool could see he was not going to sleep any more. After that, his day was one long gallop.

THERE CAME a day when Sullivan and his father were seized with a nervous anticipation; it took the form of tears on Sullivan's part, scowls and throat-clearings on his father's. All day, they were good for nothing and could not look at each other. At last, in the late afternoon, they dressed to go out.

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A hired carriage was waiting.

His father drove, following the roads automatically. When they got out, Sullivan saw that they were in a cemetery.

Something clutched tight at his heart. His father's arm came unwelcome around him, the strong fingers hard on his arm as he stumbled. Others were moving nearby; finally they all grouped, and turned, and were standing beside a half-open grave. Two men were uncovering the box already, expertly catching each shovel-load of dirt as it leaped, thrusting it sharply into the pile and waiting for the next.

Afterward, they raised the box with broad straps until it rested on boards laid across the hole in the ground. The minister, standing on the far side of the grave, unfolded his hands and spoke.

". . . From dust thou comest, and dust thou art . . ."

When he was finished, he coughed apologetically and was silent. The crowd began to flow away. The workmen stood beside the grave and the box, bareheaded in the sunlight, hands at their sides.

* * *

Sullivan was trying to get used to an unaccustomed pain that had come to live in his chest. It was like being sick, but he was not sick. It was not even an honest pain, caused by medicine; it was just a kind of persisting crying ache that would not go away.

He saw now, with the eye of disillusionment, that all his past gaiety had been foolish. Here he was in the last decade of his life, with fifty-two years behind him, and what could he show for it? Nothing but this ache of loss. His hand worked reflexively at the contents of his pocket and brought up a spiny handful: jackknife, pencil stub, assorted nails, a wad of grimy string, two marbles and an aggie, three pennies, a gray chip of rock with shiny specks on it, cracker crumbs and, over everything, pocket lint. Dust and ashes.

A hot tear crawled up his cheek.

The old man came into the room wearily, setting a broom down in the corner. He had been taking care of the house himself, these last few days. Mrs. Hastings had disappeared and Sullivan did not think she was coming back.

"Put your coat on, Larry," said his father with a sigh.

SULLIVAN did as he was told. In silence, they went out to the corner and waited for the streetcar. Gradually Sullivan began to recognize the route they took. It was the same way they had gone that time when

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he had his tonsils put in. A touch of fear came to him, but he endured it and said nothing.

It was the hospital they were going to, all right. In the dark lobby, they did not look at each other. Sullivan's father stood with his bowler hat in both hands, talking to a doctor, while Sullivan walked mechanically past him down the hall.

Where was he going in this unpleasant dark place with its sharp smells of ether and formaldehyde, and its clicking sharp-heeled nurses with sour faces over their trays? The closed doors moved past on either side.

Sullivan stopped and turned, with an unaccountable tightness in his throat, and found himself facing a door like the others. But this one was going to open.

The knob turned; Sullivan could not bear it. He wanted to run, but felt rooted to the spot. What, oh, what was it? The door was opening, and inside, on the bed —

A gray woman. Her tired eyes opened and she tried to smile at him.

"Mother," he said.

—DAMON KNIGHT

★ ★ ★ ★ ★

FORECAST

"Shoot the wad!" has always been the motto of this magazine . . . and your evidence that it's followed is the way we've recklessly printed every Theodore Sturgeon story as fast as it has come in, without holding out for replacements. We intend to go on doing just that. It's a nervous way of doing business, but writers like Sturgeon have an admirable habit of coming through—and not merely with usable material—but with tense, brilliant stories!

For example, in next month's issue, Theodore Sturgeon offers a novella, THE OTHER MAN, that's in the same exalted class with his towering award-winning *Baby Is Three*. In THE OTHER MAN, he shows with dismaying impact how wholly, shockingly impossible it is for a tradition-smashing doctor to take a particular case—one reason, everybody knows; the other, he keeps entirely to himself—only there isn't a single way for him to get out of taking the impossible case!

As a contrast, Arthur Sellings VERBAL AGREEMENT, a decidedly disagreeable problem of a novelet, puts an unsuccessful poet in another pickle: What would the aliens want one-half so precious as the incredibly beautiful animal skins they refuse to sell?

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Early Model

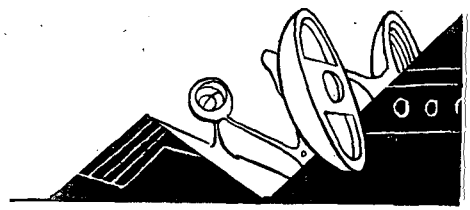
By ROBERT SHECKLEY

Opening a new planet? Then take Bentley's advice—invulnerability is a great thing, but make doubly sure you don't overdo it!

THE landing was almost a catastrophe. Bentley knew his coordination was impaired by the bulky weight on his back; he didn't realize how much until, at a crucial moment, he stabbed the wrong button. The ship began to drop like a stone. At the last moment, he overcompensated, scorching a black hole into the plain below him. His ship touched, teetered for a moment, then sickeningly came to rest.

Bentley had effected mankind's first landing on Tels IV.

Illustrated by EMSH



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His immediate reaction was to pour himself a sizable drink of strictly medicinal scotch.

When that was out of the way, he turned on his radio. The receiver was imbedded in his ear, where it itched, and the microphone was a surgically implanted lump in his throat. The portable sub-space set was self-tuning, which was all to the good, since Bentley knew nothing about narrowcasting on so tight a beam over so great a distance.

"All's well," he told Professor Sliggert over the radio. "It's an Earth-type planet, just as the survey reports said. The ship is intact. And I'm happy to report that I did not break my neck in landing."

"Of course not," Sliggert said, his voice thin and emotionless through the tiny receiver. "What about the Protec? How does it feel? Have you become used to it yet?"

BENTLEY said, "Nope. It still feels like a monkey on my back."

"Well, you'll adjust," Sliggert assured him. "The Institute sends its congratulations and I believe the government is awarding you a medal of some sort. Remember, the thing now is to fraternize with the aborigines, and if possible to establish a trade agreement of some sort, any sort. As a precedent. We need this planet, Bentley."

"I know."

"Good luck. Report whenever you have a chance."

"I'll do that," Bentley promised and signed off.

He tried to stand up, but didn't make it on the first attempt. Then, using the handholds that had been conveniently spaced above the control board, he managed to stagger erect. Now he appreciated the toll that no-weight extracts from a man's muscles. He wished he had done his exercises more faithfully on the long trip out from Earth.

Bentley was a big, jaunty young man, over six feet tall, widely and solidly constructed. On Earth, he had weighed two hundred pounds and had moved with an athlete's grace. But ever since leaving Earth, he'd had the added encumbrance of seventy-three pounds strapped irrevocably and immovably to his back. Under the circumstances, his movements resembled those of a very old elephant wearing tight shoes.

He moved his shoulders under the wide plastic straps, grimaced, and walked to a starboard porthole. In the distance, perhaps half a mile away, he could see a village, low and brown on the horizon. There were dots on the plain moving toward him. The

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villagers apparently had decided to discover what strange object had fallen from the skies breathing fire and making an uncanny noise.

"Good show," Bentley said to himself. Contact would have been difficult if these aliens had shown no curiosity. This eventuality had been considered by the Earth Interstellar Exploration Institute, but no solution had been found. Therefore it had been struck from the list of possibilities.

The villagers were drawing closer. Bentley decided it was time to get ready. He opened a locker and took out his linguascene, which, with some difficulty, he strapped to his chest. On one hip, he fastened a large canteen of water. On the other hip went a package of concentrated food. Across his stomach, he put a package of assorted tools. Strapped to one leg was the radio. Strapped to the other was a medicine kit.

Thus equipped, Bentley was carrying a total of 148 pounds, every ounce of it declared essential for an extraterrestrial explorer.

The fact that he lurched rather than walked was considered unimportant.

THE natives had reached the ship now and were gathering around it, commenting disparagingly. They were bipeds. They had short thick tails and their features were human, but nightmare human. Their coloring was a vivid orange.

Bentley also noticed that they were armed. He could see knives, spears, lances, stone hammers and flint axes. At the sight of this armament, a satisfied smile broke over his face. Here was the justification for his discomfort, the reason for the unwieldy seventy-three pounds which had remained on his back ever since leaving Earth.

It didn't matter what weapons these aboriginals had, right up to the nuclear level. They couldn't hurt him.

That's what Professor Sliggert, head of the Institute, inventor of the Protec, had told him.

Bentley opened the port. A cry of astonishment came from the Telians. His linguascene, after a few seconds' initial hesitation, translated the cries as, "Oh! Ah! How strange! Unbelievable! Ridiculous! Shockingly improper!"

Bentley descended the ladder on the ship's side, carefully balancing his 148 pounds of excess weight. The natives formed a semicircle around him, their weapons ready.

He advanced on them. They shrank back. Smiling pleasantly, he said, "I come as a friend." The linguascene barked out the harsh

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consonants of the Telian language.

They didn't seem to believe him. Spears were poised and one Telian, larger than the others and wearing a colorful headdress, held a hatchet in readiness.

Bentley felt the slightest tremor run through him. He was invulnerable, of course. There was nothing they could do to him, as long as he wore the Protec. Nothing! Professor Sliggert had been certain of it.

BEFORE takeoff, Professor Sliggert had strapped the Protec to Bentley's back, adjusted the straps and stepped back to admire his brainchild.

"Perfect," he had announced with quiet pride.

Bentley had shrugged his shoulders under the weight. "Kind of heavy, isn't it?"

"But what can we do?" Sliggert asked him. "This is the first of its kind, the prototype. I have used every weight-saving device possible—transistors, light alloys, printed circuits, pencil-power packs and all the rest. Unfortunately, early models of any invention are invariably bulky."

"Seems as though you could have streamlined it a bit," Bentley objected, peering over his shoulder.

"Streamlining comes much later. First must be concentration, then compaction, then group-function, and finally styling. It's always been that way and it will always be. Take the typewriter. Now it is simply a keyboard, almost as flat as a briefcase. But the prototype typewriter worked with foot pedals and required the combined strength of several men to lift. Take the hearing aid, which actually shrank pounds through the various stages of its development. Take the linguascene, which began as a very massive, complicated electronic calculator weighing several tons—"

"Okay," Bentley broke in. "If this is the best you could make it, good enough. How do I get out of it?"

Professor Sliggert smiled.

Bentley reached around. He couldn't find a buckle. He pulled ineffectually at the shoulder straps, but could find no way of undoing them. Nor could he squirm out. It was like being in a new and fiendishly efficient straitjacket.

"Come on, Professor, how do I get it off?"

"I'm not going to tell you."

"Huh?"

"The Protec is uncomfortable, is it not?" Sliggert asked. "You would rather not wear it?"

"You're damned right."

"Of course. Did you know that in wartime, on the battlefield,

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soldiers have a habit of discarding essential equipment because it is bulky or uncomfortable? But we can't take chances on you. You are going to an alien planet, Mr. Bentley. You will be exposed to wholly unknown dangers. It is necessary that you be protected at all times."

"I know that," Bentley said. "I've got enough sense to figure out when to wear this thing."

"But do you? We selected you for attributes such as resourcefulness, stamina, physical strength — and, of course, a certain amount of intelligence. But—"

"Thanks!"

"But those qualities do not make you prone to caution. Suppose you found the natives seemingly friendly and decided to discard the heavy, uncomfortable Protec? What would happen if you had misjudged their attitude? This is very easy to do on Earth; think how much easier it will be on an alien planet!"

"I can take care of myself," Bentley said.

SLIGGERT nodded grimly. "That is what Atwood said when he left for Durabella II and we have never heard from him again. Nor have we heard from Blake, or Smythe, or Korishell. Can you turn a knife-thrust from the rear? Have you eyes in the back of your head? No, Mr. Bentley, you haven't — *but the Protec has*!"

"Look," Bentley had said, "believe it or not, I'm a responsible adult. I will wear the Protec at all times when on the surface of an alien planet. Now tell me how to get it off."

"You don't seem to realize something, Bentley. If only your life were at stake, we would let you take what risks seemed reasonable to you. But we are also risking several billion dollars' worth of spaceship and equipment. Moreover, this is the Protec's field test. The only way to be sure of the results is to have you wear it all the time. The only way to ensure *that* is by not telling you how to remove it. We want results. You are going to stay alive whether you like it or not."

Bentley had thought it over and agreed grudgingly. "I guess I might be tempted to take it off, if the natives were really friendly."

"You will be spared that temptation. Now do you understand how it works?"

"Sure," Bentley said. "But will it really do all you say?"

"It passed the lab tests perfectly."

"I'd hate to have some little thing go wrong. Suppose it pops a fuse or blows a wire?"

"That is one of the reasons for

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its bulk," Sliggert explained patiently. "Triple everything. We are taking no chance of mechanical failure.

"And the power supply?"

"Good for a century or better at full load. The Protec is perfect, Bentley! After this field test, I have no doubt it will become standard equipment for all extraterrestrial explorers." Professor Sliggert permitted himself a faint smile of pride.

"All right," Bentley had said, moving his shoulders under the wide plastic straps. "I'll get used to it."

But he hadn't. A man just doesn't get used to a seventy-three-pound monkey on his back.

THE Telians didn't know what to make of Bentley. They argued for several minutes, while the explorer kept a strained smile on his face. Then one Telian stepped forward. He was taller than the others and wore a distinctive headdress made of glass, bones and bits of rather garishly painted wood.

"My friends," the Telian said, "there is an evil here which I, Rinek, can sense."

Another Telian wearing a similar headdress stepped forward and said, "It is not well for a ghost doctor to speak of such things."

"Of course not," Rinek admitted. "It is not well to speak of evil in the presence of evil, for evil then grows strong. But a ghost doctor's work is the detection and avoidance of evil. In this work, we must persevere, no matter what the risk."

Several other men in the distinctive headdress, the ghost doctors, had come forward now. Bentley decided that they were the Telian equivalent of priests and probably wielded considerable political power as well.

"I don't think he's evil," a young and cheerful-looking ghost doctor named Huascl said.

"Of course he is. Just look at him."

"Appearances prove nothing, as we know from the time the good spirit Ahut M'Kandi appeared in the form of a—'

"No lectures, Huascl. All of us know the parables of Lalland. The point is, can we take a chance?"

Huascl turned to Bentley. "Are you evil?" the Telian asked earnestly.

"No," Bentley said. He had been puzzled at first by the Telians' intense preoccupation with his spiritual status. They hadn't even asked him where he'd come from, or how, or why. But then, it was not so strange. If an alien had landed on Earth during certain periods of religious zeal, the first question asked might

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have been, "Are you a creature of God or of Satan?"

"He says he's not evil," Huascl said.

"How would he know?"

"If he doesn't, who does?"

"Once the great spirit G'tal presented a wise man with three kdal and said to him—"

And on it went. Bentley found his legs beginning to bend under the weight of all his equipment. The linguascene was no longer able to keep pace with the shrill theological discussion that raged around him. His status seemed to depend upon two or three disputed points, none of which the ghost doctors wanted to talk about, since to talk about evil was in itself dangerous.

To make matters more complicated, there was a schism over the concept of the penetrability of evil, the younger ghost doctors holding to one side, the older to the other. The factions accused each other of rankest heresy, but Bentley couldn't figure out who believed what or which interpretation aided him.

WHEN the sun drooped low over the grassy plain, the battle still raged. Then, suddenly, the ghost doctors reached an agreement, although Bentley couldn't decide why or on what basis.

Huascl stepped forward as spokesman for the younger ghost doctors.

"Stranger," he declared, "we have decided not to kill you."

Bentley suppressed a smile. That was just like a primitive people, granting life to an invulnerable being!

"Not yet, anyhow," Huascl amended quickly, catching a frown upon Rinek and the older ghost doctors. "It depends entirely upon you. We will go to the village and purify ourselves and we will feast. Then we will initiate you into the society of ghost doctors. No evil thing can become a ghost doctor; it is expressly forbidden. In this manner, we will detect your true nature."

"I am deeply grateful," Bentley said.

"But if you *are* evil, we are pledged to destroy evil. And if we must, we can!"

The assembled Telians cheered his speech and began at once the mile trek to the village. Now that a status had been assigned Bentley, even tentatively, the natives were completely friendly. They chatted amiably with him about crops, droughts and famines.

Bentley staggered along under his equipment, tired, but inwardly elated. This was really a coup! As an initiate, a priest, he would have an unsurpassed opportunity to gather anthropological data,

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to establish trade, to pave the way for the future development of Tels IV.

All he had to do was pass the initiation tests. And not get killed, of course, he reminded himself, smiling.

It was funny how positive the ghost doctors had been that they *could* kill him.

The village consisted of two dozen huts arranged in a rough circle. Beside each mud-and-thatch hut was a small vegetable garden, and sometimes a pen for the Telian version of cattle. There were small green-furred animals roaming between the huts, which the Telians treated as pets. The grassy central area was common ground. Here was the community well and here were the shrines to various gods and devils. In this area, lighted by a great bonfire, a feast had been laid out by the village women.

BENTLEY arrived at the feast in a state of near-exhaustion, stooped beneath his essential equipment. Gratefully, he sank to the ground with the villagers and the celebration began.

First the village women danced a welcoming for him. They made a pretty sight, their orange skin glinting in the firelight, their tails swinging gracefully in unison. Then a village dignitary named Occip came over to him, bearing a full bowl.

"Stranger," Occip said, "you are from a distant land and your ways are not our ways. Yet let us be brothers! Partake, therefore, of this food to seal the bond between us, and in the name of all sanctity!"

Bowing low, he offered the bowl.

It was an important moment, one of those pivotal occasions that can seal forever the friendship between races or make them eternal enemies. But Bentley was not able to take advantage of it. As tactfully as he could, he refused the symbolic food.

"But it is purified!" Occip said.

Bentley explained that, because of a tribal taboo, he could eat only his own food. Occip could not understand that different species have different dietary requirements. For example, Bentley pointed out, the staff of life on Tels IV might well be some strychnine compound. But he did not add that even if he wanted to take the chance, his Protec would never allow it.

Nonetheless, his refusal alarmed the village. There were hurried conferences among the ghost doctors. Then Rinek came over and sat beside him.

"Tell me," Rinek inquired after a while, "what do you think of evil?"

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"Evil is not good," Bentley said solemnly.

"Ah!" The ghost doctor pondered that, his tail flicking nervously over the grass. A small green-furred pet, a mog, began to play with his tail. Rinek pushed him away and said, "So you do not like evil."

"No."

"And you would permit no evil influence around you?"

"Certainly not," Bentley said, stifling a yawn. He was growing bored with the ghost doctor's tortuous examining.

"In that case, you would have no objection to receiving the sacred and very holy spear that Kran K'leu brought down from the abode of the Small Gods, the brandishing of which confers good upon a man."

"I would be pleased to receive it," said Bentley, heavy-eyed, hoping this would be the last ceremony of the evening.

Rinek grunted his approval and moved away. The women's dances came to an end. The ghost doctors began to chant in deep, impressive voices. The bonfire flared high.

Huascl came forward. His face was now painted in thin black and white stripes. He carried an ancient spear of black wood, its head of shaped volcanic glass, its length intricately although primitively carved.

HOLDING the spear aloft, Huascl said, "O Stranger from the Skies, accept from us this spear of sanctity! Kran K'leu gave this lance to Trin, our first father, and bestowed upon it a magical nature and caused it to be a vessel of the spirits of the good. Evil cannot abide the presence of this spear! Take, then, our blessings with it."

Bentley heaved himself to his feet. He understood the value of a ceremony like this. His acceptance of the spear should end, once and for all, any doubts as to his spiritual status. Reverently he inclined his head.

Huascl came forward, held out the spear and—

The Protec snapped into action.

Its operation was simple, in common with many great inventions. When its calculator-component received a danger cue, the Protec threw a force field around its operator. This field rendered him invulnerable, for it was completely and absolutely impenetrable. But there were certain unavoidable disadvantages.

If Bentley had had a weak heart, the Protec might have killed him there and then, for its action was electronically sudden, completely unexpected and physically wrenching. One moment, he was standing in front of the

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great bonfire, his hand held out for the sacred spear. In the next moment, he was plunged into darkness.

As usual, he felt as though he had been catapulted into a musty, lightless closet, with rubbery walls pressing close on all sides. He cursed the machine's super-efficiency. The spear had not been a threat; it was part of an important ceremony. But the Protec, with its literal senses, had interpreted it as a possible danger.

Now, in the darkness, Bentley fumbled for the controls that would release the field. As usual, the force field interfered with his positional sense, a condition that

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seemed to grow worse with each subsequent use. Carefully he felt his way along his chest, where the button should have been, and located it at last under his right armpit, where it had twisted around to. He released the field.

The feast had ended abruptly. The natives were standing close together for protection, weapons ready, tails stretched stiffly out. Huascl, caught in the force field's range, had been flung twenty feet and was slowly picking himself up.

The ghost doctors began to chant a purification dirge, for protection against evil spirits. Bentley couldn't blame them.

When a Protec force field goes on, it appears as an opaque black sphere, some ten feet in diameter. If it is struck, it repels with a force equal to the impact. White lines appear in the sphere's surface, swirl, coalesce, vanish. And as the sphere spins, it screams in a thin, high-pitched wail.

All in all, it was a sight hardly calculated to win the confidence of a primitive and superstitious people.

"Sorry," Bentley said, with a weak smile. There hardly seemed anything else to say.

HUASCL limped back, but kept his distance. "You cannot accept the sacred spear," he stated.

"Well, it's not exactly that," said Bentley. "It's just — well, I've got this protective device, kind of like a shield, you know? It doesn't like spears. Couldn't you offer me a sacred gourd?"

"Don't be ridiculous," Huascl said. "Who ever heard of a sacred gourd?"

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"No, I guess not. But please take my word for it—I'm not evil. Really I'm not. I've just got a taboo about spears."

The ghost doctors talked among themselves too rapidly for the linguascene to interpret. It caught only the words "evil," "destroy," and "purification." Bentley decided his forecast didn't look too favorable.

After the conference, Huascl came over to him and said, "Some of the others feel that you should be killed at once, before you bring some great unhappiness upon the village. I told them, however, that you cannot be blamed for the many taboos that restrict you. We will pray for you through the night. And perhaps, in the morning, the initiation will be possible."

Bentley thanked him. He was shown to a hut and then the Telians left him as quickly as possible. There was an ominous hush over the village; from his doorway, Bentley could see little groups of natives talking earnestly and glancing covertly in his direction.

It was a poor beginning for cooperation between two races.

He immediately contacted Professor Sliggert and told him what had happened.

"Unfortunate," the professor said. "But primitive people are notoriously treacherous. They might have meant to kill you with the spear instead of actually handing it to you. Let you have it, that is, in the most literal sense."

"I'm positive there was no such intention," Bentley said. "After all, you have to start trusting people sometime."

"Not with a billion dollars' worth of equipment in your charge."

"BUT I'm not going to be able to *do* anything!" Bentley shouted. "Don't you understand? They're suspicious of me already. I wasn't able to accept their sacred spear. That means I'm very possibly evil. Now what if I can't pass the initiation ceremony tomorrow? Suppose some idiot starts to pick his teeth with a knife and the Protec saves me? All the favorable first impression I built up will be lost."

"Good will can be regained," Professor Sliggert said sententiously. "But a billion dollars' worth of equipment—"

"—can be salvaged by the next expedition. Look, Professor, give me a break. Isn't there some way I can control this thing manually?"

"No way at all," Sliggert replied. "That would defeat the entire purpose of the machine. You might just as well not be wear-

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ing it if you're allowed to rely on your own reflexes rather than electronic impulses."

"Then tell me how to take it off."

"The same argument holds true—you wouldn't be protected at all times."

"Look," Bentley protested, "you chose me as a competent explorer. I'm the guy on the spot. I know what the conditions are here. Tell me how to get it off."

"No! The Protec must have a full field test. And we want you to come back alive."

"That's another thing," Bentley said. "These people seem kind of sure they can kill me."

"Primitive peoples always overestimate the potency of their strength, weapons and magic."

"I know, I know. But you're certain there's no way they can get through the field? Poison, maybe?"

"Nothing can get through the field," Sliggert said patiently. "Not even light rays can penetrate. Not even gamma radiation. You are wearing an impregnable fortress, Mr. Bentley. Why can't you manage to have a little faith in it?"

"Early models of inventions sometimes need a lot of ironing out," Bentley grumbled. "But have it your way. Won't you tell me how to take it off, though, just in case something goes wrong?"

"I wish you would stop asking me that, Mr. Bentley. You were chosen to give the Protec a *full* field test. That's just what you are going to do."

WHEN Bentley signed off, it was deep twilight outside and the villagers had returned to their huts. Campfires burned low and he could hear the call of night creatures.

At that moment, Bentley felt very alien and exceedingly homesick.

He was tired almost to the point of unconsciousness, but he forced himself to eat some concentrated food and drink a little water. Then he unstrapped the tool kit, the radio and the canteen, tugged defeatedly at the Protec, and lay down to sleep.

Just as he dozed off, the Protec went violently into action, nearly snapping his neck out of joint.

Wearily he fumbled for the controls, located them near his stomach, and turned off the field.

The hut looked exactly the same. He could find no source of attack.

Was the Protec losing its grip on reality, he wondered, or had a Telian tried to spear him through the window?

Then Bentley saw a tiny mog

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puppy scuttling away frantically, its legs churning up clouds of dust.

The little beast probably just wanted to get warm, Bentley thought. But of course it was alien. Its potential for danger could not be overlooked by the ever-wary Protec.

He fell asleep again and immediately began to dream that he was locked in a prison of bright red sponge rubber. He could push the walls out and out and out, but they never yielded, and at last he would have to let go and be gently shoved back to the center of the prison. Over and over, this happened, until suddenly he felt his back wrenched and awoke within the Protec's lightless field.

This time he had real difficulty finding the controls. He hunted desperately by feel until the bad air made him gasp in panic. He located the controls at last under his chin, released the field, and began to search groggily for the source of the new attack.

He found it. A twig had fallen from the thatch roof and had tried to land on him. The Protec, of course, had not allowed it.

"Aw, come on now," Bentley groaned aloud. "Let's use a little judgment!"

But he was really too tired to care. Fortunately, there were no more assaults that night.

HUASCL came to Bentley's hut in the morning, looking very solemn and considerably disturbed.

"There were great sounds from your hut during the night," the ghost doctor said. "Sounds of torment, as though you were wrestling with a devil."

"I'm just a restless sleeper," Bentley explained.

Huascl smiled to show that he appreciated the joke. "My friend, did you pray for purification last night and for release from evil?"

"I certainly did."

"And was your prayer granted?"

"It was," Bentley said hopefully. "There's no evil around me. Not a bit."

Huascl looked dubious. "But can you be sure? Perhaps you should depart from us in peace. If you cannot be initiated, we shall have to destroy you—"

"Don't worry about it," Bentley told him. "Let's get started."

"Very well," Huascl said, and together they left the hut.

The initiation was to be held in front of the great bonfire in the village square. Messengers had been sent out during the night and ghost doctors from many villages were there. Some had come as far as twenty miles to take part in the rites and to see the alien with their own eyes. The ceremonial drum had

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been taken from its secret hiding place and was now booming solemnly. The villagers watched, chattered together, laughed. But Bentley could detect an undercurrent of nervousness and strain.

There was a long series of dances. Bentley twitched worriedly when the last figure started, for the leading dancer was swinging a glass-studded club around his head. Nearer and nearer the dancer whirled, now only a few feet away from him, his club a dazzling streak.

The villagers watched, fascinated. Bentley shut his eyes, expecting to be plunged momentarily into the darkness of the force field.

But the dancer moved away at last and the dance ended with a roar of approval from the villagers.

Huascl began to speak. Bentley realized with a thrill of relief that this was the end of the ceremony.

"O brothers," Huascl said, "this alien has come across the great emptiness to be our brother. Many of his ways are strange and around him there seems to hang a strange hint of evil. And yet who can doubt that he means well? Who can doubt that he is, in essence, a good and honorable person? With this initiation, we purge him of evil and make him one of us."

THERE was dead silence as Huascl walked up to Bentley.

"Now," Huascl said, "you are a ghost doctor and indeed one of us." He held out his hand.

Bentley felt his heart leap within him. He had won! He had been accepted! He reached out and clasped Huascl's hand.

Or tried to. He didn't quite make it, for the Protec, ever alert, saved him from the possibly dangerous contact.

"You damned idiotic gadget!" Bentley bellowed, quickly finding the control and releasing the field.

He saw at once that the fat was in the fire.

"Evil!" shrieked the Telians, frenziedly waving their weapons.

"Evil!" screamed the ghost doctors.

Bentley turned despairingly to Huascl.

"Yes," the young ghost doctor said sadly, "it is true. We had hoped to cure the evil by our ancient ceremonial. But it could not be. This evil must be destroyed! *Kill the devil!*"

A shower of spears came at Bentley. The Protec responded instantly.

Soon it was apparent that an impasse had been reached. Bentley would remain for a few minutes in the field, then override the controls. The Telians, seeing him still unharmed, would renew

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their barrage and the Protec would instantly go back into action.

Bentley tried to walk back to his ship. But the Protec went on again each time he shut it off. It would take him a month or two to cover a mile, at that rate, so he stopped trying. He would simply wait the attackers out. After a while, they would find out they couldn't hurt him and the two races would finally get down to business.

He tried to relax within the field, but found it impossible. He was hungry and extremely thirsty. And his air was starting to grow stale.

Then Bentley remembered, with a sense of shock, that air had not gone through the surrounding field the night before. Naturally — nothing could get through. If he wasn't careful, he could be asphyxiated.

Even an impregnable fortress could fall, he knew, if the defenders were starved or suffocated out.

He began to think furiously. How long could the Telians keep up the attack? They would have to grow tired sooner or later, wouldn't they?

Or would they?

He waited as long as he could, until the air was all but unbreathable, then overrode the controls. The Telians were sitting on the ground around him. Fires had been lighted and food was cooking. Rinek lazily threw a spear at him and the field went on.

So, Bentley thought, they had learned. They were going to starve him out.

HE TRIED to think, but the walls of his dark closet seemed to be pressing against him. He was growing claustrophobic and already his air was stale again.

He thought for a moment, then overrode the controls. The Telians looked at him coolly. One of them reached for a spear.

"Wait!" Bentley shouted. At the same moment, he turned on his radio.

"What do you want?" Rinek asked.

"Listen to me! It isn't fair to trap me in the Protec like this!"

"Eh? What's going on?" Professor Sliggert asked, through the ear receiver.

"You Telians know—" Bentley said hoarsely—"you know that you can destroy me by continually activating the Protec. I can't turn it off! I can't get out of it!"

"Ah!" said Professor Sliggert. "I see the difficulty. Yes."

"We are sorry," Huascl apologized. "But evil must be destroyed."

"Of course it must," Bentley said desperately. "But not me.

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Give me a chance. *Professor*!"

"This is indeed a flaw," Professor Sliggert mused, "and a serious one. Strange, but things like this, of course, can't show up in the lab, only in a full-scale field test. The fault will be rectified in the new models."

"Great! But I'm here now! How do I get this thing off?"

"I *am* sorry," Sliggert said. "I honestly never thought the need would arise. To tell the truth, I designed the harness so that you could not get out of it under any circumstances."

"Why, you lousy—"

"Please!" Sliggert said sternly. "Let's keep our heads. If you can hold out for a few months, we might be able—"

"I can't! The air! Water!"

"Fire!" cried Rinek, his face contorted. "By fire, we will chain the demon!"

And the Protec snapped on.

Bentley tried to think things out carefully in the darkness. He would have to get out of the Protec. But how? There was a knife in his tool kit. Could he cut through the tough plastic straps? He would have to!

But what then? Even if he emerged from his fortress, the ship was a mile away. Without the Protec, they could kill him with a single spear thrust. And they were pledged to, for he had been declared irrevocably evil.

But if he ran, he at least had a chance. And it was better to die of a spear thrust than to strangle slowly in absolute darkness.

BENTLEY turned off the field. The Telians were surrounding him with campfires, closing off his retreat with a wall of flame.

He hacked frantically at the plastic web. The knife slithered and slipped along the strap. And he was back in Protec.

When he came out again, the circle of fire was complete. The Telians were cautiously pushing the fires toward him, lessening the circumference of his circle.

Bentley felt his heart sink. Once the fires were close enough, the Protec would go on and stay on. He would not be able to override a continuous danger signal. He would be trapped within the field for as long as they fed the flames.

And considering how primitive people felt about devils, it was just possible that they would keep the fire going for a century or two.

He dropped the knife, used side-cutters on the plastic strap and succeeded in ripping it halfway through.

He was in Protec again.

Bentley was dizzy, half-fainting from fatigue, gasping great

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mouthfuls of foul air. With an effort, he pulled himself together. He couldn't drop now. That would be the end.

He found the controls, overrode them. The fires were very near him now. He could feel their warmth against his face. He snipped viciously at the strap and felt it give.

He slipped out of the Protec just as the field activated again. The force of it threw him into the fire. But he fell feet-first and jumped out of the flames without getting burned.

The villagers roared. Bentley sprinted away; as he ran, he dumped the linguascene, the tool kit, the radio, the concentrated food and the canteen. He glanced back once and saw that the Telians were after him.

But he was holding his own. His tortured heart seemed to be pounding his chest apart and his lungs threatened to collapse at any moment. But now the spaceship was before him, looming great and friendly on the flat plain.

He was going to just make it. Another twenty yards . . .

Something green flashed in front of him. It was a small, green-furred mog puppy. The clumsy beast was trying to get out of his way.

He swerved to avoid crushing it and realized too late that he

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should never have broken stride. A rock turned under his foot and he sprawled forward.

He heard the pounding feet of the Telians coming toward him and managed to climb on one knee.

Then somebody threw a club and it landed neatly on his forehead.

"AR GWY dril?" a voice asked incomprehensibly from far off.

Bentley opened his eyes and saw Huascl bending over him. He was in a hut, back in the village. Several armed ghost doctors were at the doorway, watching.

"Ar dril?" Huascl asked again.

Bentley rolled over and saw, piled neatly beside him, his canteen, concentrated food, tools, radio and linguascene. He took a deep drink of water, then turned on the linguascene.

"I asked if you felt all right," Huascl said.

"Sure, fine," Bentley grunted, feeling his head. "Let's get it over with."

"Over with?"

"You're going to kill me, aren't you? Well, let's not make a production out of it."

"But we didn't want to destroy *you*," Huascl said. "We knew you for a good man. It was the devil we wanted!"

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"Eh?" asked Bentley in a blank uncomprehending voice.

"Come, look."

The ghost doctors helped Bentley to his feet and brought him outside. There, surrounded by lapping flames, was the glowing great black sphere of the Protec.

"You didn't know, of course," Huascl said, "but there was a devil riding upon your back."

"Huh!" gasped Bentley.

"Yes, it is true. We tried to dispossess him by purification, but he was too strong. We had to force you, brother, to face that evil and throw it aside. We knew you would come through. And you did!"

"I see," Bentley said. "A devil on my back. Yes, I guess so."

That was exactly what the Protec would have to be, to them. A heavy, misshapen weight on his shoulders, hurling out a black sphere whenever they tried to purify it. What else could a religious people do but try to free him from its grasp?

He saw several women of the village bring up baskets of food and throw them into the fire in front of the sphere. He looked inquiringly at Huascl.

"We are propitiating it," Huascl said, "for it is a very strong devil, undoubtedly a miracle-working one. Our village is proud to have such a devil in bondage."

A ghost doctor from a neighboring village stepped up. "Are there more such devils in your homeland? Could you bring *us* one to worship?"

Several other ghost doctors pressed eagerly forward. Bentley nodded. "It can be arranged," he said.

He knew that the Earth-Tels trade was now begun. And at last a suitable use had been found for Professor Sliggert's Protec.

—ROBERT SHECKLEY

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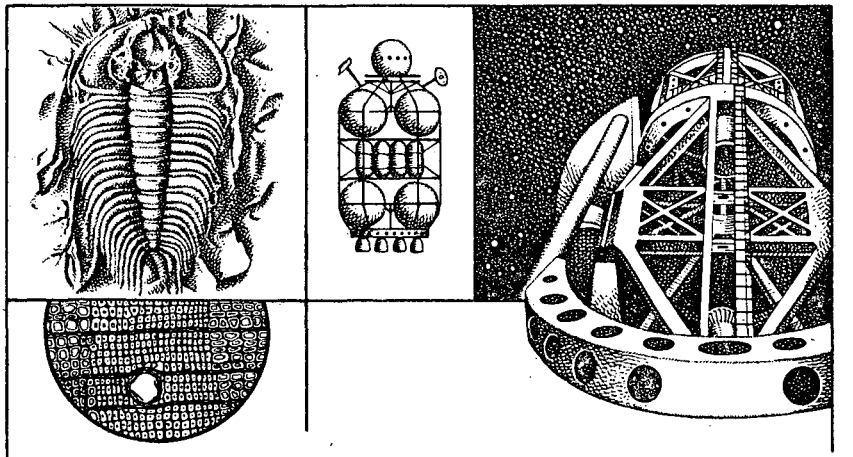
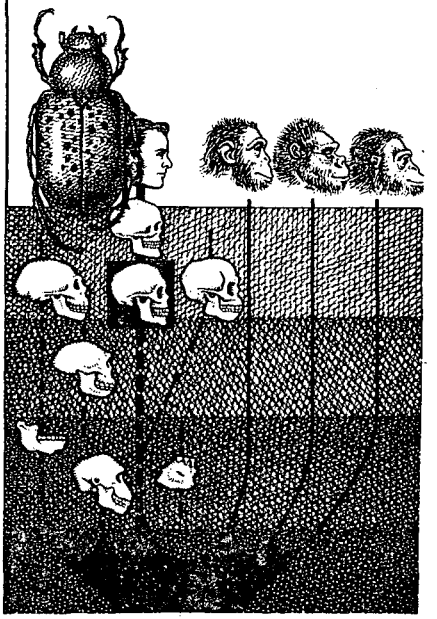


for your information

By WILLY LEY



THE DEMOTION OF PLUTO

PLUTO, outermost known planet of the Solar System, is, of course, still technically a planet, since it moves around the Sun in a closed orbit. But it is now being said that Pluto did not always have full planetary status. It has been charged—by Dr. Gerard Peter Kuiper of the University of Chicago — with being a "runaway moon" of Neptune.

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I can't make up my mind at the moment whether the charge that it is a former moon that managed to make itself independent should be considered detrimental to its reputation or whether that should enhance it. But if you take the position that being a runaway moon instead of a born planet is a demotion, you may also add that the demotion is richly deserved. Pluto simply failed to live up to the advance publicity it received as "Planet X" before its discovery. It has been a disappointment all along, for it did not turn out to be what one could reasonably have expected.

Seriously: the proper status of Pluto became dubious quite soon after the general jubilation following its discovery by Clyde W. Tombaugh in 1930. Questions piled up quickly. Was it really the Planet X for which Percival Lowell had instituted a search? Did it really cause the gravitational effects from which its presence and orbit had been calculated?

And was its final discovery, after years of diligent and difficult search, possibly just due to a lucky accident? Was it possible that Planet X, predicted not only by Percival Lowell but by other astronomers as well, still remained completely unknown and yet to be discovered?

FOR an astronomer to hunt one celestial body and discover another is not as incredible as it may sound. One of the minor moons of Jupiter was found in just that way. And it has happened repeatedly that an astronomer "checked" on one asteroid only to find out, after a while, that he had actually discovered a new one.

That such things do not happen only in the crowded Asteroid Belt is shown by a famous case involving a transatlantic cablegram. In Europe, they had discovered a new comet—not a very rare event if you have telescopic comets in mind. The observatory which made the discovery wanted it verified and cabled the fact of the discovery and the position of the object to the Lick Observatory.

The telegraph operator, obviously ignorant of astronomical notations, garbled the figures. Lick Observatory, of course, accepted the figures that had been received, and when this particular area of the sky became observable, they looked. Quite close to the cabled position, a telescopic comet was found.

It was a new comet—not the one the Lick astronomers had been asked to verify!

It has become customary to say that the discovery of Pluto began with the discovery of Ura-

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nus by Sir William Herschel on March 13, 1781. While this statement can be maintained on the grounds that the discovery of Uranus showed that there were planets beyond Saturn, which had been accepted as the outermost planet for so many centuries, there were actually many differences.

When Herschel found Uranus, he had not been looking for a new planet. There was no suspicion that it might exist, no theoretical reasoning assuming its existence. Herschel simply found it and, as a matter of fact, he believed for some time that he had merely discovered a new comet. After it had been established as a planet, it was located on quite a number of earlier star charts—17 in all — where unsuspecting observers had entered it as a fixed star.

Using these older chance observations and, of course, all the observations since the discovery by Herschel, Alexis Bouvard in Paris constructed tables of the motions of Jupiter, Saturn and Uranus. As far as Jupiter and Saturn were concerned, the tables and the observed positions agreed nicely. For Uranus, they did not agree.

One way out of the difficulty was to assume that the older observations had been careless — although there was no reason for such a posthumous insult to able observers — and to discard them. Then new tables were calculated, based only on observations after Herschel's discovery.

A few years later, it became unmistakably clear that these tables did not work, either. And in 1834, an amateur astronomer, the Reverend T. J. Hussey, wrote a letter to Sir George B. Airy, in which he blamed an unknown planet outside the orbit of Uranus for the discrepancy between calculation and observation.

THE view that an unknown planet might explain much became common among astronomers fairly fast. Professor F. B. G. Nicolai, then director of the observatory at Mannheim, said that this would best explain the fact Halley's Comet did not behave precisely as calculated. This was in 1835.

In 1842, Friedrich Wilhelm Bessel, during a visit to Sir John Herschel, the son of the discoverer of Uranus, declared that he was convinced that there was an unknown planet. After his return to Germany, he assigned his assistant to the task of calculating the position of an unknown planet from the observed discrepancies. But by that time, Bessel was no longer a young man; he died in 1846 and the job remained unfinished, at least as far

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as Bessel's discovery in Konigsberg is concerned.

But it had been completed just during those last few years of Bessel's life in two other places.

In France, Urbain J. J. Leverrier presented his report on the calculation of the existence and position of a Trans-Uranian planet to the French Academy on November 10, 1845.

In England, John Couch Adams, a rather young man who had only recently received his bachelor's degree, did the same work and forwarded his report to Sir George B. Airy around November 1st, 1845.

There has been much unnecessary discussion on whether priority should be awarded to Adams or to Leverrier. The plain fact is that both men did the same work at the same time. Since astronomical circles were well acquainted with the "misbehavior" of Uranus, it is surprising that more people were not attacking the same problem simultaneously.

IT MAY be worthwhile to pause for a moment here and explain just what it was that made astronomers speak in such decided terms about an "unknown planet." Let us first consider the case of a single planet moving around a sun. To simplify the picture still more, let us assume that its orbit is not a ellipse, as it very likely would be, but a circle. In this case, the single planet would move at a constant rate; it would arrive at a certain point at a specific time. Now we add a second planet, which moves around the same sun, but in an orbit outside the orbit of the first planet. It will move at a slower rate and it also has to follow a much larger path.

The result is that the inner planet will overtake the outer one at regular intervals. As the two come near each other, the effects of their own gravitational fields will enter into the game. They pull each other, and the inner planet moves a bit faster than it would if the other did not exist. By the same token, the outer planet is slowed down a bit. The closer they come to each other, the more strongly this mutual "perturbation" will show up.

But at the instant the inner planet passes the outer planet, the effect is reversed. Now the inner planet is slowed down by the pull of the outer one, which falls behind, while the outer planet is speeded up a bit by the attraction of the inner one that races ahead.

In short, if a planet, at a certain point of its orbit, first speeds up and then slows down, it indicates a gravitational pull by a body in an orbit farther away

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from its sun. Conversely, a slowing down followed by a speed-up would indicate the presence of another body in an orbit nearer its sun.

To return to the case of Uranus, it was slowed down a little and then suddenly pulled along by the gravitational fields of both Saturn and Jupiter. Their orbit, positions and weights were known and could be taken into account. But even when all the perturbations by Saturn and Jupiter had been figured in, calculations and observations obstinately failed to agree.

Of course observers make minor mistakes, but not all observers make them in the same direction. Moreover, the discrepancies were too large to be ascribed to "observational errors." And the whole picture suggested a pull from "outside." If astronomers had observed Uranus for several complete revolutions around the Sun, they could have established the period of the unknown planet outside of Uranus simply by tabulating the interval between two such perturbations that could not be ascribed to Saturn or to Jupiter.

If they are so-and-so-many years apart, then the period of revolution of the external unknown body must be so-and-so-many years. It would have been simple.

BUT Uranus needs 84 years to go around the Sun once. In 1845, it had not been observed for even one complete revolution. You could stretch that by taking the older observations, where the planet had been mistakenly entered on star charts as a star, but even then the evidence was spotty and the calculation far from simple. To get anywhere, one assumption had to be made, concerning the distance of the unknown planet from the Sun.

John Couch Adams assumed a distance of 38.4 A. U. (astronomical units) — he expected the unknown planet to be 38.4 times as far from the Sun as the Earth revolves around it. That assumption was according to the Bode-Titius rule (see Table I) which succeeds in expressing the distances of the planets from the Sun by simple arithmetic. Nobody quite knows why it works that way, even though there has been much thought expended on just that problem.

Even though we don't know why, a glance at the table shows that it does work nicely for all the planets from Mercury to Uranus. There was no reason to assume that it should not work for the unknown planet, too, and Adams began his work by supposing that distance for the unknown body.

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As for Leverrier in France, he assumed a distance of 36.15 A.U. With either assumption, a case for an unknown planet could be worked out and both Adams and Leverrier could say that the planet should be in a given position along its orbit on a certain day.

Adams picked October 1st, 1846, as the day for which he made his calculation and stated that it should be in heliocentric longitude 328° or 329°. (The true position of Neptune for that day was 327°57′.) Leverrier picked January 1st, 1847, as his date and gave a heliocentric longitude of 326°32′ as the probable position of the unknown planet. The two independent calculations agreed rather well, as one can see.

THE next problem was, naturally, to find it in the sky. This meant searching the area of the calculated position more or less around the plane of the ecliptic, since all the planets of the Sun move in about the same plane as does the Earth.

If this had to be done today, the observer would photograph that region of the sky, wait three days or so and photograph the same region again. Then he would settle down to the job of comparing the plates in order to see whether one of the dots of light had moved during the time elapsed between exposures. There is a special instrument for doing just that, but even with this instrument, it is tedious work. Moreover, a few known planets might move in the same area and have to be identified first.

But in 1846, photography was not yet a help to the astronomer and the job had to be done visually. The area of the sky had to be compared with prepared star charts to see whether an unmapped dot of light had wandered in.

TABLE I The Bode-Titius Rule

4+(0×3) : 10=	0.4;	MERCURY,	actual distance	0.39	A.U.
4+(1×3) : 10=	0.7;	VENUS,	" "	0.72	A.U.
4+(2×3) : 10=	1.0;	EARTH,	" "	1.00	A.U.
4+(4×3) : 10=	1.6;	MARS,	" "	1.52	A.U.
4+(8×3) : 10=	2.8;	CERES,	" "	2.77	A.U.
4+(16×3) : 10=	5.2;	JUPITER,	" "	5.20	A.U.
4+(32×3) : 10=	10.0;	SATURN,	" "	9.54	A.U.
4+(64×3) : 10=	19.6;	URANUS,	" "	19.19	A.U.
4+(128×3) : 10=	38.8;	NEPTUNE,	" "	30.07	A.U.
4+(256×3) : 10=	77.2;	not matched by a known planet			
4+(512×3) : 10=	154.0;	also not matched			

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It is now known that the British observer entrusted with the search by Airy actually saw Neptune, but failed to pay attention to it. His whole performance was such that it is safe to say that he wasn't interested in the project and merely went through the motions he had been ordered to make.

Leverrier, in September, 1846, wrote to the German astronomer Galle in Berlin, who requested the permission of the director of the observatory, J. F. Encke, to proceed with the search. Encke approved and Galle, assisted by a student named H. L. d'Arrest, went to work. He found it the same night and verified the discovery during the following night.

Much later, it turned out that the French astronomer Lalande had seen the planet twice, on the 8th and 10th of May, 1795. But since the "star" seemed to have shifted positions, Lalande concluded that he must have made a mistake in one of his observations. The position which seemed less likely to him, for reasons we don't know, he rejected completely. The other one he decorated with a question mark and let it go at that!

After Neptune had been discovered, it was only natural that virtually everybody wondered whether the story would be repeated. Of course first it was necessary to learn everything that could be learned about Neptune.

Almost at once, its large moon Triton was discovered—by William Lassell — and it was established that it was 220,000 miles from the planet, that its diameter must be around 3000 miles and that it needed 5.88 days to go once around Neptune.

As for Neptune itself, it was slightly larger than Uranus, with a diameter of 33,900 miles (that of Uranus 30,900 miles) and that it turned around its axis at a rather fast rate, in 15 hours and 40 minutes. (Uranus does it in 10 hours and 40 minutes.) Neptune was not only slightly larger than Uranus but also heavier — it would take 14.7 Earths to balance Uranus on a scale; for Neptune, 17.2 Earths would be needed.

I may add here, out of chronology, that Gerard P. Kuiper discovered a much smaller moon of Neptune in 1949. It is small, about 200 miles in diameter, and needs 730 days to go around the planet in a very elongated orbit.

WHILE Neptune compared to Uranus and the other large outer planets in most respects, it proved to be surprising as far as its distance was concerned. It was 8.8 astronomical units closer to

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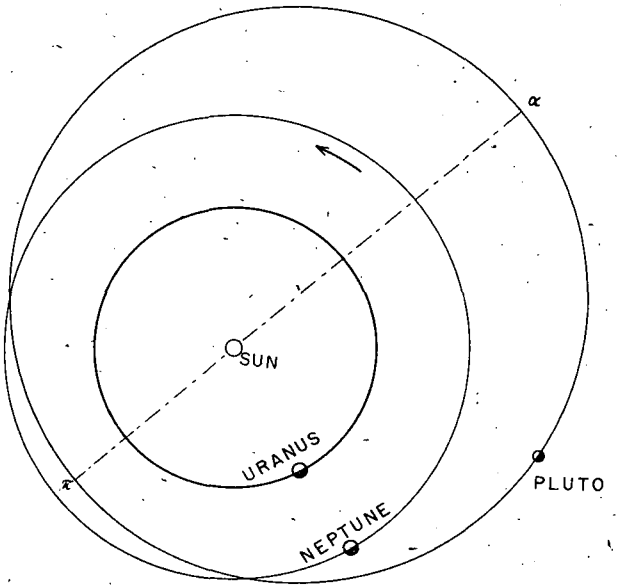

Orbit of Pluto projected on the plane of Neptune's orbit. The Greek letter alpha marks Pluto's aphelion, the letter pi its perihelion

the Sun than the Bode-Titius rule said; it was 820 million miles farther inward in the Solar System than one could reasonably expect.

The main problem was not changed by this fact — whether the Bode-Titius rule missed in the case of Neptune or not, was there a planet still farther out? To derive its presence, provided it existed, from irregularities in the motion of Neptune, would have required a long wait, for Neptune needs almost 165 Earth years for one revolution. But there were other leads one could follow.

Comets, which have very little mass, are very strongly "perturbed" by planets. It was the French astronomer Camille Flammarion who pointed to a comet thus "perturbed" and far outside the orbit of Neptune, at that. More of them were found after Flammarion had put the idea into some minds. Moreover, a planet beyond Neptune, a "Trans-Neptune," would not only

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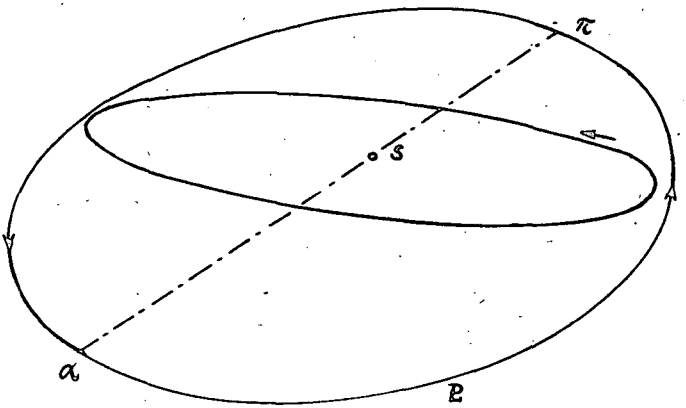
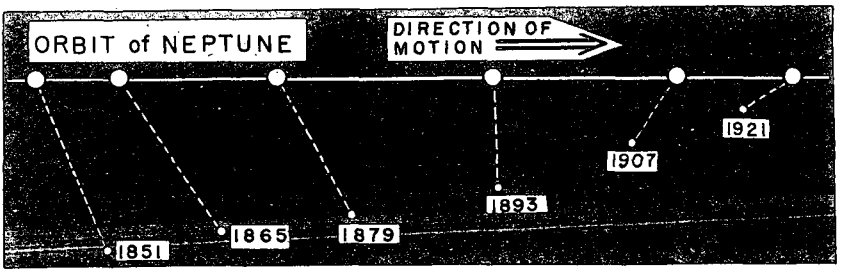


Pluto's orbit drawn in perspective to show that it does not actually cross Neptune's orbit

perturb the orbit of Neptune; it would also show up in the motions of Uranus, which by 1900 had been observed for one and a half of its revolutions.

There seemed to be enough evidence by then for Professor George Forbes to predict a Trans-Neptune at a distance of about 100 A. U., requiring 1000 years for one complete revolution. He expected it to be even larger than Jupiter in size!

The German astronomer Dr. Theodor Grigull of Munster supposed a Trans-Neptune which he called "Hades" at a distance of 50 A. U. with a period of revolu-



The relative positions of Neptune and Pluto as seen from the Sun for about 80 years prior to Pluto's discovery

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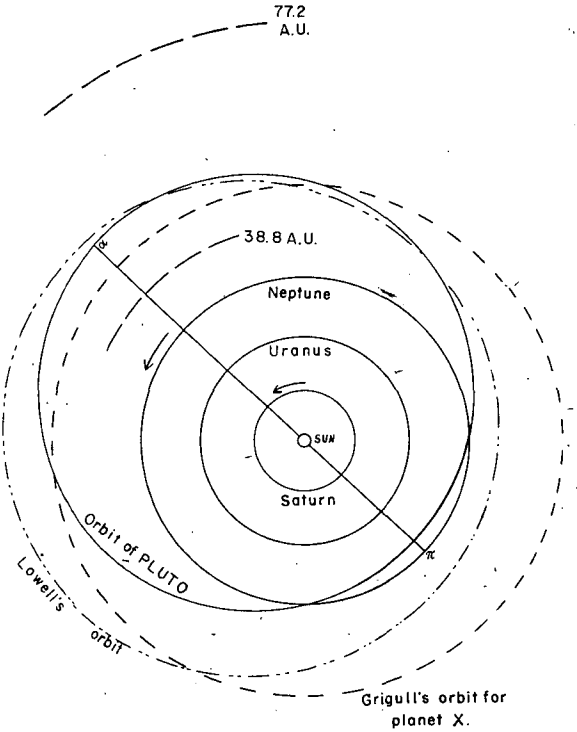

The orbits of the outer planets, actual and predicted. (For explanation, see text)

tion of 360 years and a size like Uranus or Neptune.

Professor William H. Pickering came to a very similar conclusion. His Trans-Neptune was a little farther out than Grigull's, with a period of 373 years.

And Thomas J[efferson] J[ackson] See predicted the planet "Oceanus" at 41.25 A. U. with a period of 272 years. He went further — there probably was a Trans-Oceanus at 56 A. U. with a period of 420 years and still another at 72 A. U. with a period of somewhere around 610 years.

The most careful set of calculations was that of Percival Lowell, published in 1915 under the title *Memoir on a Trans-Neptunian Planet*, which he called "Planet X." He supposed it to be of about half the mass of Uranus, or seven Earth masses, with a period of around 280 years.

One important difference between Lowell and the other astronomers who had thought about the same problem was that he had his own observatory.

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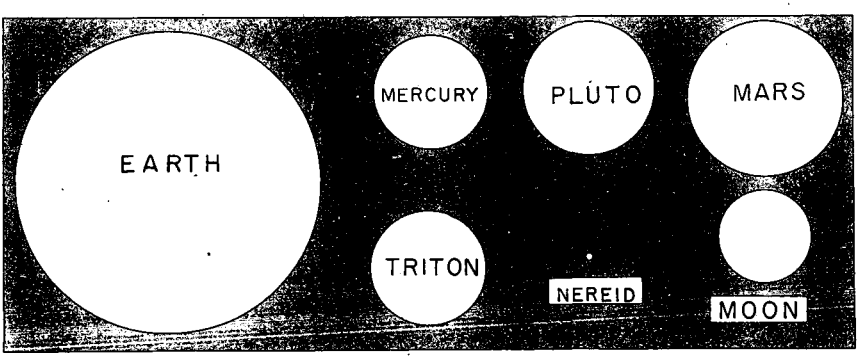
After having reached a theoretical conclusion, he could start an actual search. He did not know, of course, that he was not to live much longer — he died in November, 1916 — but all the time that was left to him, he hoped that one of his assistants would inform him about the actual discovery.

THE announcement came more than 13 years after his death, on March 13, 1930. The date had a double significance— it was both the date on which Herschel had discovered Uranus and Percival Lowell's birthday.

Pluto really was discovered, though, in the afternoon of February 18, 1930, when Clyde W. Tombaugh examined two plates, taken on January 23rd and January 30th, both centered on the star Delta Geminorum. Tombaugh said later that he was sure at once — the two images were as sharp as those of stars (a comet image would have been somewhat diffuse) and the displacement was right for a planet beyond Neptune.

Of the names that had been suggested for Planet X, the name Pluto was chosen, since it began with the letters P.L., the initials of the man who had predicted it. A comparison between the prediction and actuality is given on Table II, but it must be kept in mind that it took years until the figures for Pluto were established and that the values given in the last three lines did not become known until recently.

But the searching questions arose soon. Pluto's orbit, as it became known, was unlike that



The diameters of the three smallest major planets compared to that of Earth, of our moon and the two moons of Neptune. (The diameter of Pluto taken as 45 per cent of that of Earth)

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TABLE II	PLANET X	PLUTO
Period	282 years	248.43 years
Perihelion	204.9°	223° 10′ 30″
Inclination	about 10°	17° 8′ 38.4″
Eccentricity	0.202	0.2486438
Distance at perihelion	34.31 A. U.	29.8 A. U.
Same in million miles	3,190	2,770
Distance at aphelion	51.69 A. U.	49.4
Same in million miles	4,808	4,595
Length of major axis of orbit	86 A. U.	78.9 A. U.
Rotation	not predicted	6.4 days
Diameter	not predicted	3,550 miles
Mass compared to Earth	7	less than 5 per cent

Comparison between Lowell's "Planet X" and Pluto

of any other planet. It was strongly inclined to the ecliptic and so eccentric that the planet's perihelion, the point of its orbit nearest the Sun, is actually closer than the nearest Neptune can come to the Sun, even though the average distance is greater. Pluto will go through its perihelion in 1989 and, for the period from 1969 to 2009, it will be closer to the Sun than Neptune. Aphelion, the point farthest from the Sun, will be reached in 2113. An orbit like that just did not sit well with a planet.

The next question was its size. It was too small to show a disk in any telescope then in existence. That meant that it had to be far smaller than Neptune, for even the Earth should still show a tiny disk at that distance.

But if it was smaller than the Earth, say somewhere between Earth and Mars in size, it could not possibly cause a measurable pertubation on planets as large and as distant from it as Uranus and Neptune. To make it cause the perturbations from which Planet X had been computed, its average density would have to be sixty times that of water. Such densities in a planet that size cannot exist.

Then Kuiper succeeded in making some direct measurements. The first figure given, accompanied by the statement that the probable margin of error was large, was a diameter of 6000 miles, 2000 miles less than that of the Earth. The next fig-

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ure was 3700 miles, less than that of Mars, which is 4200 miles. Meanwhile, this has been revised downward some more, to around 3500 miles, which is the same as the diameter of Saturn's largest moon, Titan.

I DON'T recall who said it first, but about ten years after Pluto's discovery, somebody remarked that it might merely be a runaway moon of Neptune. Pluto seemed to be about as far displaced north and south from the ecliptic as Neptune was "displaced" inward, if you took the Bode-Titius rule seriously. The total picture of the edge of the Solar System looked as if something violent had taken place there at one time.

Neptune was more than 800 million miles closer to the Sun than it should be. Its then only known satellite Triton moved around it in the wrong direction and Uranus seemed to have been influenced to the extent of having its axis as well as the orbits of its satellites tilted by around 90 degrees. Whatever it was that did all this could easily have torn Pluto away from Neptune and thrown it into the orbit it now has.

But nobody could figure out a force which could tilt Uranus by 90 degrees without disturbing its orbit and which could move Neptune by 800 million miles without making its orbit eccentric.

But one more discovery about Pluto makes it more likely than ever that it once was a moon of Neptune. Pluto had to have a period of rotation around its axis. But that period was not known until very recently, when it was found to be 6.39 days.

This is much slower by far than the rotational period of any other of the outer planets. Only moons rotate that slowly around their axes, because all moons are forced by their planets into a period of axial rotation equal to the periods of their revolutions around their planets. If Pluto, when a moon of Neptune, was somewhat farther out than Triton, a period of 6.39 days would be very logical.

Dr. G. P. Kuiper thinks that Pluto made itself independent at a very early stage of the formation of the Solar System. In fact, he believes that at that time Neptune lost Triton and Nereid, too, but later succeeded in recapturing them. At any event, the discovery of the slow axial rotation of Pluto makes it certain that it is not the Planet X Percival Lowell and the others were postulating.

Whether Planet X exists is still uncertain. And where it is, if it exists, is still unknown.

—WILLY LEY

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The Genius Heap

By JAMES BLISH

Get away from it all—escape neutrino storms by coming to Callisto! Drover did—and he walked into a human tornado!

THE fight began, really, with a simple comment that Mordecai Drover offered to nobody in particular while watching Dr. Helena Curtis, the Bartók Colony's resident novelist, trying to finish her research before nightfall. He couldn't fathom why the remark had set off such an explosion.

After all, all *he* had said was, "I can never quite get used to it."

"What?" Henry Chatterton asked abstractedly.

"Seeing a woman using an index. It's as outlandish a sight as a chimpanzee roller-skating."

At this precise moment, Callisto slid into Jupiter's shadow and the nighttime clamor of the Bartók Colony began to rise rapidly toward its sustained crescendo. Typewriters began to rattle one after the other, pianos to compete discordantly, a phonograph to grunt out part of *Le Sacre du Printemps* for Novgorod's choreography pawns, and

Illustrated by GAUGHAN

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collapsible tubes to pop air-bubbles as paint was squeezed onto palettes. The computer, too, began humming deep in its throat, for Dr. Winterhalter of the Special Studies section was trying to make it compose a sonata derived entirely from information theory.

The clamor would last four hours and 53.9 minutes before beginning to taper off.

Helena, however, made no move toward her typewriter. She closed her reference book with a savage snap, as though trying to trap a passing moth, and stood up. Mordecai, who had already plunged deep into Canto XVII of *The Drum-Major and the Mask*, failed to notice her glare until he became aware of an unprecedented silence in the Commons Room. He looked up.

HELENA was advancing on him, step by step, each pace made more menacing by the peculiar glide Callisto's slight gravity enforced. She was graceful under any circumstances; now she looked positively serpentine, and her usually full lips were white. Alarmed, Mordecai put down his pen.

"Just what did you mean by that?" she asked.

By what? Mordecai searched his memory frantically. At first, all he could come up with was the last strophe he had written, only a few seconds ago, and as yet he had no idea what he meant by that; the thing was badly flawed and needed revision before even its author could know what it meant.

Then he remembered the remark about women and indexes —indices?—already hours away in the fleet subjective time of Callistan night.

"Why, it wasn't anything," he said wonderingly. "I mean you know how it is with chimpanzees—"

"Oh, I do, do I?"

"Well, maybe I didn't—what I mean is, they get to be very skillful at unusual tasks — it's just that you don't expect them to be —Helena, it was only a joke! What good is a joke after it's explained? Don't be obstinate."

"Meaning don't be obstinately stupid?" she said through her teeth. "I've had enough of your nasty innuendoes. If there's anything I loathe, it's a would-be genius with no manners."

Henry Chatterton's smock was already spattered with egg tempera from top to bottom and the painting on his canvas was nearly a quarter finished. Slashing away at one corner of it with a loaded brush, he said out of the corner of his mouth:

"We've had to put up with that viper's tongue of yours long enough, Helena. Why don't you

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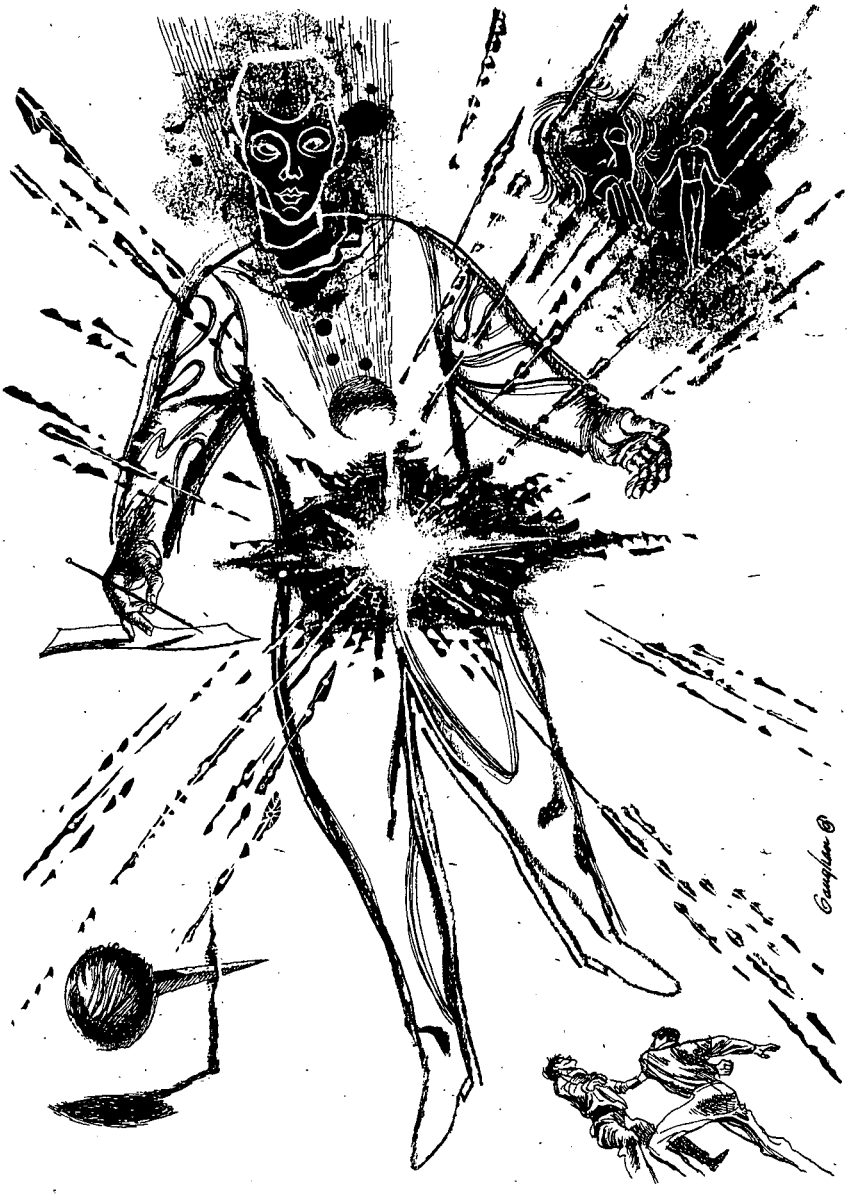

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go hitch your flat frontispiece over your decolleté novel and let the rest of us work?"

"Now wait a minute," John Rapaport said, flushing heavily and looking up from the dural plate on which he had been sketching. "By what right does an egg-coddler go out of his way to insult a craftsman, Chatterton? If you have to dip that brush of yours in blatherskite, save it for your daubs—never mind smearing it over Helena."

Chatterton swung around in astonishment and then began to smirk.

"So *that's* how it's going to be! Well, Johnny boy, congratulations. But I predict that you'll find five hours makes a very, very long night. Don't say an expert didn't warn you."

Rapaport swung. His engravers' point flew accurately at Chatterton's left eye. The painter ducked just in time; the tool stuck, quivering, in his canvas. He took one look at it and rushed on Rapaport, howling. Mordecai would have been out of the way with no difficulty, if Helena's open hand had not caught him a stinging blow across the chops at the crucial moment. Then he and Chatterton went over.

The noise quickly attracted the rest of the happy family. Only fifteen minutes after Mordecai's innocent remark, the Commons Room was untidily heaped with geniuses.

It looked like a long night.

BECAUSE Mordecai, a month before, had fumbled so long and so helplessly with his spacesuit until an impatient crewman had decided to help him dog it down, he had almost been dumped out of the airlock, and the ship's captain barely gave him time to get clear before taking off again. Within a few seconds, it seemed, he had been more alone than he had ever been in his life.

He had stood still inside the suit, because he could do nothing else, and fumed. Actually, he knew, he was more afraid than angry, though he was thoroughly furious with himself, and with Martin Hope Eglington, his mentor. It certainly hadn't been Mordecai's idea to come to Jupiter IV. He had never even been in space before, not even so far as the Moon, and had had no desire to go.

Nevertheless, here he was, under a sky of so deep a blue that it was almost black and full of sharp cold stars, even though it was midday. The Sun was a miniature caricature of itself, shedding little light and no apparent heat. There was nothing else to be seen but a wilderness of tumbled rocks, their sharp edges and

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spires protruding gauntly through deep layers of powdery snow, all the way to the near horizon. The fact that Mordecai could hear a faint sighing whistle outside his suit, as of the saddest and weakest of all winds, did not cheer him.

It had begun, as such things usually did with Mordecai, with what had seemed an innocent question, this time one asked by someone else. Eglington had been helping him with the prosody of *The Drum Major and the Mask*, Mordecai's major poem thus far, cast as a sirvente to Wallace Stevens. They had swinked at it all day in Eglington's beautiful and remote Vermont home. Mordecai had now been Eglington's only protégé; there was a time when the Pulitzer Prize winner had maintained a sort of salon of them, but now he was too old for such rigors.

"THAT'S enough for now," Eglington had said, shortly after dinner. "It's really shaping up very well, Mordecai, if you could just get yourself past trying to compress everything you know into one phrase. In a poem of this length, at least a little openness of texture is desirable —if only to let the reader into it."

"I see that now. Whew! When I first got started, nobody told me poetry could be such hard work."

"All real poetry is hard work; that's one of its telltales. Tell me something, Mordecai—when do you do most of your work? I don't mean your best work, necessarily; at what hours of the day do you find that you work most easily, can concentrate best, put the most out?"

That had been easy to answer. Mordecai's work habits had been fixed for fifteen years. "Between about eight at night and two in the morning."

"I thought so. That's true of most creative people, including scientists. The exact hours vary, but the fact is that most of the world's creative work—and creative play; it's the same thing—is done at night."

"Interesting," Mordecai had said. "Why is that, do you suppose?"

"Oh, I don't have to suppose. The answer is known. It's because, during those hours, the whole mass of the Earth is between you and the Sun. That protects you from an extremely penetrating kind of solar radiation, made up of particles called neutrinos. The protection is negligible statistically, because all matter is almost perfectly transparent to neutrinos, but it seems that the creative processes are tremendously sensitive to even

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the slightest shielding effect."

"Too bad they can't be blocked off completely, then. I'd like to be able to work days. I just can't."

"You can, if you want to undergo some privations in the process," Eglington had said, almost idly. "Ever hear of the Bartók Colony?"

"Yes, it's a retreat of some sort. Never went in for that kind of thing much myself. I work better alone."

"I see you don't know where it is. It's on Callisto."

The notion had startled and somewhat repelled Mordecai, for whom the neutrinos had already been almost too much. He would expect Eglington to know about such things—he was not called "the poet of physics" for nothing—but Mordecai had no interest in them. "On Callisto? Why, for heaven's sake?"

"Well, for two reasons," Eglington had said. "First of all, because at that distance from the Sun, the raw neutrino flux is only about three point seven per cent of what it is here on Earth. The other reason is that for nearly five hours of every two weeks—that is, every Callistan day—you have the small bulk of the satellite plus the whole mass of Jupiter between you and the Sun. For that period, you're in a position to work your creative engine with almost no neutrino static. I'm told that the results, in terms of productivity, are truly fantastic."

"Oh," Mordecai had said. "It seems like an extreme measure, somehow."

EGLINGTON had leaned forward, intensely serious. "Only extreme measures produce great work, Mordecai. Tell me—what was the big change in Man that differentiated him permanently, qualitatively, from all other species?"

"The opposable thumb," Mordecai had said promptly.

"Wrong. The opposable thumb helps Man to handle things, it stimulates curiosity, it gets the world's work done. It is, if you like, a device of daylight. But the ability to think in abstractions is the big skill that Man has and that is an ability that works mostly at night. Second question: why was fire Man's most important discovery?"

"Well, it helped him to get more nourishment out of his food," Mordecai said, but more cautiously now.

"That's minor. What else?"

Mordecai had known he was well out of his depth by that time. He simply shook his head.

"Independence of the Sun, Mordecai. That one gain has permanently arrested Man's evo-

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lution. Without it, he was developing a number of specialized types for different environments: the bushman, the pigmy, the Eskimo, and so on. Fire not only halted the process, but reversed it; the devolution set in. Now we don't have to adapt to our environments; we can carry our own wherever we go. In that way, we protect ourselves from adapting away from abstract thinking and toward some purely physical change that will make it unnecessary for us to think."

Eglington had paused and sniffed reflectively at his brandy. Then, with apparent irrelevance, he had added: "Do you tell your relatives what your work hours are?"

"Not by a long shot. They're all alarm-clock types. They think I'm lazy as it is; if I told them I didn't get up until noon, they'd be sure of it."

"Exactly. Daylight encourages monkey-thinking, practicality, conformity, routine operation. It's at night that Man-thinking gets done. During the day, there are the twinges about the regular paycheck, keeping the family fed, making your relatives proud of you, taking no chances, and all the rest of that rot. 'Early to bed and early to rise' is nothing but an invitation to put your head into a horse-collar. The man who stays in bed all day isn't a lazy slob; he's a man who's very sensibly protecting his valuable human brains from the monkey-drive."

"You make a good case," Mordecai had said admiringly.

"I really think you ought to go, Mordecai. I'll give you a letter to the chairman; he's at the Earth headquarters at MIT. I'm quite sure I can swing it."

MORDECAI had felt a belated surge of alarm. "But, Martin, wait a minute—"

"Don't worry; you'll be admitted. Anyhow, you've gone as far as you can go with me. Now you need to strike out on your own—and this is the way to do it."

And so Mordecai Drover, on Jupiter IV, frightenedly had been waiting for somebody from the Bartók Colony to pick him up. He did not feel a particle more creative than he had felt at his worst moments back home. Rather less, as a matter of fact.

A stirring in the middle distance drew his attention belatedly. Something like a bug was coming toward him. As it came closer, he saw that it was a sort of snowmobile, with huge fat tires and a completely sealed cabin. He let out a gasp of relief.

"Hello," his suit radio said, in a voluptuous feminine voice. "Stand fast, Mr. Drover; we have you on the radar. Welcome to Bartók Colony."

The voice virtually trans-

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formed Callisto for Mordecai; if there was one historical period in which he would most liked to have lived, it was that of Marlene Dietrich. When, half an hour later, he found that Dr. Helena Curtis strongly resembled that — alas! — long-dead Helen of the age before space flight, he had been suddenly, as Eglington probably had expected, ready to stay on Callisto forever.

"Now there are only two rules here," Dr. Hamish Crenshaw, the Colony's director, had begun murmuring in Mordecai's ear while his suit was being stripped off him. "First of all, we have no facilities for children; you'll understand, I'm sure, and forgive us when I tell you that we — uh — Take Steps. Dietary steps; you'll never notice them, but we like to be honest. And the other rule is Get Along. We're all one family here and we try not to quarrel."

"Oh, of course not," Mordecai had said, but he hadn't really been listening.

AFTER the fight, the Colony's surgeon — a staff member, not a guest—gave Mordecai a hyaluronidase injection for his black eye and dismissed him without ceremony. Evidently the brawl in the Commons Room had produced several more serious wounds. Mordecai prowled the corridors morosely for a while, but kept meeting people he had only recently been fighting with—or, at least, trying to fight out from under. He finally went back to his own cubicle and tried to resume *The Drum-Major and the Mask.*

It was hopeless. The cacophony of noise in the station had hardly bothered him after the first strange night, but now he couldn't think through it. He wondered how the others had stood it for so long. Neutrinos or no neutrinos, his own brain was generating nothing but blots.

Besides, he felt almost intolerably guilty. After all, his remark had been unfeeling, especially after what had happened two nights ago (or a month ago, as he kept thinking of it). That had been one of the unexpected effects of night on Jupiter IV: the same shielding that liberated the creative impulse seemed to liberate the libido as well. In four hours and 53.9 minutes, two people could fall in love, become passionately and exclusively attached to each other, and fall explosively out of love before the night was over—a process that would have taken months or years on Earth.

No wonder the Colony, as Dr. Crenshaw had put it, Took Steps against the possibility of children.

But was it Mordecai's fault that Helena was the most beautiful woman in the Colony and

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hence the most frequent figure in these amours and explosions? Besides, he had suffered, too. He could hardly find it comfortable to be out of love with Dietrich, after having had adored her image hopelessly since he was old enough to distinguish pants from trousers. He doubted that he would ever write another love poem again.

The corridors of the Colony began to resound with a series of hoots and shrieks, as loud as though they were being heard by an insect trapped in a steam calliope. Dr. Winterhalter had once again begun to hope, and had wired the computer's output directly to the Hammond organ; the computer's current notion of what a sonata ought to sound like was rattling the doors in their sockets. The computer had not yet quite solved the music of the spheres. The Cadre to Suppress Dr. Winterhalter, made up of all the musicians in the Colony, would be stampeding past Mordecai's door at any moment.

Yet after all, he told himself, the remark hadn't been any more virulent than many of the things that got said daily in the Colony, and Helena had always been one of the worst offenders; Chatterton had been right about that. Even at home, Mordecai recalled with nostalgia, nighttime was the time you said things that you regretted the next day. He had always attributed that looseness of tongue to the dulling of inhibitions by fatigue (or, of course, alcohol), but since it was so much worse here, maybe the double-damned neutrinos had been responsible for that too. Or maybe they hadn't. If you coop thirty highly individualistic people in one sealed can on a cheerless iceball like Callisto, you should expect tempers to get somewhat frayed.

Whatever the answer, Mordecai wanted out. There was no doubt in his mind that being in the Colony had increased his productivity markedly, but it wasn't worth the constant emotional upheavals.

HE PEERED up and down the corridor to make sure he would not be run over by the Cadre, and then set off determinedly for the office of Dr. Hamish Crenshaw. There was no sense in postponing matters.

As he passed Helena Curtis' closed door, however, he paused. Maybe one postponement could do no harm. There was another question nagging at him, which he suddenly decided was more important. He knocked tentatively.

Helena opened the door and stared at him, her eyes coldly furious. "Beat it," she said.

"I don't mean to interrupt," Mordecai said humbly. "I apolo-

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gize for my remark. It was nasty and inexcusable. Also, I've got something I'd like to discuss with you."

"Oh?" For a moment, she simply continued to glare at him. Then, gradually, some of the unfriendliness seemed to die away. "Well, it's decent of you to apologize. And that beastly squabble did sour me on Rapaport just in time; maybe I owe you an apology, too. What's on your mind?"

"I want to know what you know about old Walker Goodacre—the man who founded the Colony. I'm beginning to think there's a joker buried somewhere and he may be it."

"Hm. All right, come on in. But no monkeyshines, Mordecai."

"Certainly not," he said innocently. "That's part of the problem, Helena. This setup is supposed to encourage what they call 'Man-thinking' and it does seem to have that effect—but it also seems to bring out all the monkey-emotions. I'm starting to wonder why."

"Well," Helena said, sitting down thoughtfully, "they say the neutrinos—"

"Hang the neutrinos! I mean let's just forget about them for the time being and think about what the Colony's supposed to accomplish. We should begin with the history; there's where you can help, right at the beginning. How is the Colony actually run?"

"By a board of directors, administering the Goodacre estate," she said. "The place was originally founded by Goodacre himself; he put ten million dollars into a special trust to build the place and then bequeathed another ten to keep it going. The Colony is run off the interest from the bequest."

"ALL right. What kind of man was Goodacre?" Mordecai asked. "I mean aside from the fact that he was a rich man. Wasn't he also a scholar of stature? I seem to remember that he was."

"Oh, yes," Helena said. "He was a sociologist, considered one of the most eminent of his time. Mordecai, if you're suggesting that this whole thing is an experiment and we're just experimental animals, you're wasting your breath. The newspapers milked all the melodrama out of that when the Colony was first founded. Of course, it's an experiment; what of it?"

"Of course. But what kind of experiment? Look here, Helena, you know more history than I do. A lot more. Think back on the history of bequests to artists. Do they usually come from men who are artists or scholars themselves? It's my impression that they don't. More usually, they

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come from men who are not creative themselves and feel guilty or frustrated about it — men whose money was often made by dubious means in the first place, so some of it is given away to the most 'disinterested' people the rich man can imagine, in expiation. Like the Nobel Prizes—money made from dynamite. Only a cultural cipher could dream of an artist as 'disinterested' in that sense."

"I can think of a few exceptions," Helena said, "but only partial ones. In that respect, old Goodacre was an unusual case. I'll grant you that."

"Right. Now it's my judgment that this experiment *as it was outlined to us* is working very badly. Yet Goodacre was a top sociologist, you tell me; why should the biggest experiment he ever designed, being run strictly in accordance with his wishes, be so miserable a failure?"

"Well, sociology's not an exact science—"

"I had the notion that it'd become much more exact since Rashevsky, at least. And I think it might be more sensible to assume that old Goodacre did know what he was doing and that this mess is exactly the outcome he wanted. *Why did he want it?*"

"Mordecai," Helena said slowly, "I apologize again and this time I mean it. Let's see how close we can get to the bottom of this before the night's over."

"Why stop then?" Mordecai urged. "It's only a question of fact—no creativity involved."

In this, of course, he was a little underestimating himself. Deduction is creative; Mordecai had simply had too little experience with it to realize the fact.

DURING the succeeding days, Dr. Hamish Crenshaw appeared to be indulging in a series of improvised attempts to prevent further brawls by dividing the sheep from the goats, without having quite made up his mind how to tell one animal from the other. His first move was to forbid working in the Commons Room, which did nothing but stop work in the Commons Room; it utterly failed to prevent brawling there, and it was impossible for the director to close the Commons Room entirely.

Then he tried to reshuffle the room assignments so that all the guests whose records carried the fewest marks for quarrels would wind up on one side of the Colony and the most quarrelsome guests on the other. The net gain here was fewer bruises sustained by accident by the least quarrelsome. The most quarrelsome continued to quarrel, more frequently now because they were

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deprived of the calming effects sometimes exerted by the cooler heads.

After this had become sufficiently obvious to all, Dr. Crenshaw decided to reshuffle the rooms according to talent. This was abortive. Everybody at Bartók Colony, except the staff, was supposed to be a leader in his field, so Crenshaw apparently concluded that the only way to measure talent was by age: young poets, for example, were sheep, old poets goats. Since there was only one poet in the Colony at the moment — Mordecai — the plan foundered on Mordecai's obvious inability to baa and bleat at the same time from opposite sides of the dome.

But nothing seemed to discourage Dr. Crenshaw. He tried to segregate the sexes. This produced the biggest riot in the Colony's history. The next move in the game of musical chairs was to lump all the practitioners of the noisy arts — music, ballet, sculpture — into one group and those who quietly wrote or painted into the other. The concentration of noise made it worse than it had been when diffused and in no way decreased the squabbling.

The most recent solution was a curfew. The rules were that everyone had to be in his room by nightfall and had to stay there until the night was over. All gatherings were forbidden, but exceptions were made for teams ("such as composer-and-librettist," Dr. Crenshaw had added with what he seemed to think was great tact). This move really made a difference; it actually cut the quarreling in half.

It also cut productivity right back down to the daytime level, even in the naturally solitary arts.

"Which I think is what you've been aiming for all along," Mordecai told Crenshaw grimly, in Crenshaw's office. "All the other silly rules were designed to convey an illusion of bumbling desperation, to disguise the curfew as just one more example of the same."

CRENSHAW laughed disarmingly but a look at Mordecai and Helena evidently convinced him that neither had been disarmed.

He put his hands together on his desktop and leaned forward confidingly.

"Now that's a peculiar theory," he said, still smiling. "Suppose you tell me why you think so."

"It's in keeping with the whole philosophy," Mordecai said. "Dr. Curtis and I have been doing considerable research lately and we've come up with some conclusions we don't like. Among

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other things, we talked to Dr. Ford."

Crenshaw frowned. Dr. Ford was the colony's staff physicist. The statement that he had been talking to guests obviously did not please the director.

"We found out a few things about the neutrino notion that we hadn't known before," Mordecai went on. "Dr. Ford says that neutrinos go through ordinary matter as if it weren't there. Back home on Earth, the neutrino flux is so great that there are a hundred neutrinos passing through a space the size of a matchbox at any given instant—yet even detecting their existence was one of the hardest problems physicists ever tackled. He says the difference between the night and the day flux on Earth has never been measured."

"Never by instruments," Crenshaw said smoothly. "But the human brain measures it; it's a very delicate detector."

"That's pure hypothesis," Helena retorted. "Dr. Ford says that to capture the average neutrino would take a lead barrier *fifty light-years thick*. Under those conditions, exceptional captures within a human brain must take place on the order of once every million years or more."

"We considered all this in setting up the Colony," Crenshaw said. "We do have people like Dr. Ford on our staff, after all. Obviously the neutrino-capture theory was not proven. It was a conjecture. But we've been in operation for quite a few years now and the empirical evidence has been adding up all during that time. Your own personal experience should confirm it. There *is* a definite increase in creativity out here and particularly when we are in the Jovian shadow."

HE leveled a finger at them or, rather, between them. "This is one reason why I don't like to have physicists like Ford shooting off their mouths to our guests. Physicists don't understand the artistic temperament and artists generally don't know enough about physicists to be aware of their limitations. You didn't know, for instance, the real meaning behind what Ford was telling you. I do know: he was complaining that the neutrino theory is based upon the concept that the brain acts as an organic detector, and the ground rules of his science don't allow organic dectors. Since you had no way of knowing this and, like most lay people, you regard physicists as minor gods, you're shaken up. You've allowed him to discredit not only your belief in the Colony, but even the evidence of your own experience!"

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"VERY plausible," Mordecai said. "But experience isn't evidence until it's put in order and there's always more than one possible order. Dr. Curtis and I don't know much about physicists, it's true, but we do know something about artists. We know that they're highly suggestible. They have to be or they'd be in some other trade. Convince them that they're going to be more creative in the dark of the moon, or after a course of mescal, or in the Jovian neutrino shadow, and most of them *will* be more creative, whether there's any merit in the actual notion you've sold them or not." He grinned reminiscently. "I once knew a writer whose work was largely unsalable, so he had to have a regular job to stay alive. He developed the notion that he had to be fired at least once a year in order to maintain his productivity. Sooner or later, toward the end of each job year, he *was* fired—and it *did* increase his writing output for a while. What has that to do with neutrinos?"

"Nothing," Crenshaw said. "A single example never has anything to do with anything except itself. But let's suppose for the sake of argument that the neutrino theory is not only shaky, but entirely wrong. Have you anything better to offer? Until we discover just what creativity actually is—what goes on in the brain to produce it—we'll never really *know* whether it's possible for a neutrino to interfere with that process. In the meantime, the empirical evidence we collect here in the Colony adds up."

"Adds up to what?" Mordecai demanded.

Crenshaw only shrugged.

"Dr. Crenshaw," Helena said, "maybe there is something in the neutrino theory all the same. I'm perpared to admit the possibility —*but I don't think it makes any difference*. We know that artists always produce best under stress, either personal or societal—it doesn't matter what kind. If production increases in this Colony, it's because conditions here for a resident artist are *worse* than those he had to work under back home—not better. No wonder production dropped when you cut down our internecine warfare. You've always had it in your power to reduce those quarrels, but you didn't choose to exercise it until now."

"Why now?" Crenshaw inquired gently.

"To cut down on the amount of our work that gets home, of course," Mordecai said, amazed that the man could continue such an obvious rear-guard defense after his major defenses had been breached. "Dr. Crenshaw, we know that old Good-

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acre knew what he was doing. He was interested in the role of the artist in society. He was asking himself: Does society really need these creative people? Does it really want them around? Are the things they produce worth having, weighed against the damage that they do just by being alive and impinging upon normal people? So he contrived this experiment."

CRENSHAW said, "I don't see the point." But he was sweating.

"We do. Above all, old Goodacre wanted to know this: What would happen to society if, generation after generation, the cream of its artists is skimmed off, the artists sent into exile—and their work returned to Earth only at a measurable, controllable rate? Take architecture, for instance: you skim Gropius off one generation, Wright off another, and so on, and what's left? Draftsmen, renderers, workhorses, without anybody to stir them into a ferment. Sooner or later, Earth has no creativity left in its gene-pool but the kind that makes men into engineers and scientists—and mightn't that be just as well, in the long run? *That's* the question this Colony is set up to answer, and brilliantly, too."

Crenshaw sighed.

After a while, Helena said: "Well?"

"Well, what?" Crenshaw asked tiredly. "*I'm* not going to tell you you're right or wrong or way off base. No matter what conclusions you come to, I still have to stay here and administer this madhouse. I'm not Goodacre; I just work here."

"That's what the guards at Dachau said," Mordecai said.

"The question is, what do you plan to do?"

"Go home," Mordecai stated immediately.

"And how do you plan to do that? You signed a contract when you came here. In addition to your legal ties, you can't leave here until I personally say you can. I can simply deny you passage, deny you knowledge of the ship schedules—there are half a hundred other knots I can tie you in. Why not just sit and take it? It won't last forever."

"Of course it won't," Helena said grimly. "But we're not sheep, nor Judas-goats. Suppose the experiment ends by proving that society *can* get along without us? Then we'd never get home at all, no matter what the contract says."

Crenshaw looked down at his hands, and then up again. His expression was now one of frank boredom. "That may well be true. However, I deny it for the record.

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And now I have work to do. Thank you for coming to see me."

Mordecai grinned. Crenshaw had obviously never thought of him as a conspirator and Mordecai was savoring the surprise.

"There are other people waiting to see you," he said. He got up and opened the door.

THERE were others, all right. There was Novgorod and his highly muscular group of dancers; Henry Chatterton, his beard bristling and his smock-pockets loaded with eggs far too far gone to make decent egg tempera; John Rapaport with his bottles of acid and his beltful of nastily pointed little engravers' tools; Dr. Winterhalter with a sheaf of papers full of calculations on orbits and schedules to Earth; and quite a few additional "harmless artists." They looked anything but harmless now.

"We're going home," Mordecai said. "Maybe society would like to get along without us, but we aren't going to let it. It won't catch us again by offering us a nice workroom, where it's always as quiet as three o'clock in the morning. We don't need that kind of phony solitude—we carry the real thing with us wherever we go, even when we're fighting among ourselves. Do you understand that?"

"No," Crenshaw said hoarsely. "I don't think I do understand."

Mordecai took Helena's hand as she rose. "Then you didn't study your experimental animals thoroughly enough. If you had, you would have found that one of them, F. Scott Fitzgerald, knew the flaw in your experiments a whole century ago and wrote it down."

"What—was it?"

" 'In a real dark night of the soul,' " quoted Mordecai, " 'it is *always* three o'clock in the morning.' "

—JAMES BLISH

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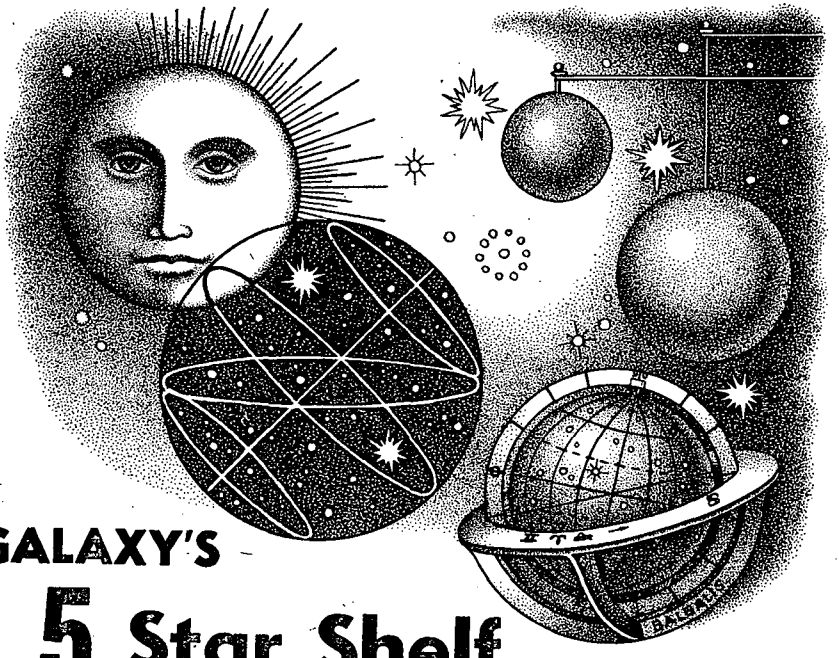

GALAXY'S 5 Star Shelf

THE CITY AND THE STARS by Arthur C. Clarke. Harcourt, Brace & Co., $3.75

WHEN *Against the Fall of Night* appeared in 1953, virtually everyone agreed that here was one of the finest science fiction novels in years. In his foreword to the present book, Clarke explains his dissatisfaction with the earlier work and exercises his prerogative to rewrite it.

The revision is certainly as intriguing in relating the mission of Alvin, the sole malcontent in the billion-year-old city of Diaspar, which had gone unchanged since its creation at the moment that Man gave up the stars. The immortal inhabitants of the city are tied to its environs by an ancestral fear of the invaders, legendary enemies who purportedly had driven Man back to his native Earth and sequestered him within this one city.

Marvelous it is, with its guiding brain, the Central Computer, and its Memory Banks which contain the electronic patterns of every food, article of furniture, indeed every human born and reborn into Diaspar in its clever method of immortality. But Alvin, a Unique, never having a

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prior incarnation, is possessed of a driving discontent with it.

His incomprehensible urge eventually has repercussions, but it is not the function of this review to give them away.

For those who have read the first version of this book, perhaps you will wonder, along with me, why the author should have been unhappy with such a superior work. Is he like Alvin, his rebellious hero?

THE RETURN OF THE KING by J. R. R. Tolkien. Houghton Mifflin Co., $5.00

WHEN, after finishing a book, you continue holding the volume in limp hand, with a faraway look, you know you've had a genuine reading experience. Here it is.

This is the final volume in a trilogy, *The Lord of the Rings.* The previous two books, *The Fellowship of the Ring* and *The Two Towers,* saw the formation of the Fellowship to combat the evil powers of the Dark Lord, Sauron. Man, Dwarf, Elf and Hobbit join in mutual pact to destroy the Ring, which alone gives Evil power over the forces of Good.

It sounds downright silly as a synopsis, but it becomes a gripping adventure in the hands of a master like Tolkien. These were the days of Middle Earth when natural forces were wilder than today and supernatural forces wilder still. The trance quality of the narrative is comparable to that other hypnotic masterpiece of fantasy, *The Worm Ouroboros* by E. R. Eddison—recommendation enough.

THE BEST FROM FANTASY AND SCIENCE FICTION, Fifth Series, Edited by Anthony Boucher. Doubleday & Co. $3.50

THE publication of this year's F & S F anthology is something less than an event. Editor Boucher, to paraphrase Rev. Sidney Smith, tries to overcome gravity by an excess of levity.

Despite the coyness of the collection, some of the individual stories are worthy efforts, such as "Pottage," another of Zenna Henderson's haunting stories of The People, outcasts from space upon Earth, hiding their wild talents through fear of reprisal; "Created He Them," Alice Eleanor Jones' disturbing vision of a future world.

The other assets are yarns by Asimov, Knight, Clarke and Raymond E. Banks. Knight in particular has a daffy tale that explains just about every frustration you might have been subject to and also has possibly the wildest scene in science fiction, in which he uses every cliché in

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the repertoire as a spurious explanation of his hero's dilemma.

Used as spice, the Knight story would add taste to the collection. But as Mrs. Murphy undoubtedly would have said, Boucher dumped so much of it into the chowder that he spoiled the overall flavor.

CRY HUNGER by Sidney Bliss. Vantage Press, Inc., $2.75

AN UNUSUAL book in many ways — subject matter, treatment, even its inclusion in this review. Semantically speaking, it *is* science-fiction, since it concerns a scientific experiment and it certainly is fictitious. The experiment in question involves the starvation of a group of college students, volunteers, to determine whether morality, religious convictions, sex standards, etc., are affected by variations in or curtailment of diet.

The author is qualified for his task, having headed the Dept. of Biochemistry at Tulane, and also by his wartime post of chief of Military Nutrition in the Surgeon General's Office. Artistically speaking, however, the author's scientific background is not sufficient to provide more than a very moderately interesting discourse on sexuality and homosexuality. These he certainly airs without fears, but one wonders if it was necessary to go through an entire book to prove a scientific point that few would argue.

MEN, ROCKETS AND SPACE RATS by Lloyd Mallan. Julian Messner, Inc., $5.95

KEEPING informed on mankind's progress toward space travel becomes a lighter task because of this book. It is written in the manner of a novel of high adventure. The author sets the stage for each episode so that the famous real-life characters come to glowing life.

For instance, he tells how one night, while engaged in his search for Pluto, Professor Clyde Tombaugh almost froze to death in the observatory, could count on no aid and only ingenious thinking enabled him to get out of his tight spot. This sole living discoverer of a major planet has since come up with a camera that can detect a tennis ball 1,000 miles out in space.

From Dr. Robert Goddard's early experiments at Roswell, New Mexico, Mallan takes us in fascinating anecdotes down to the present accelerated rocket program of the U. S. at White Sands Proving Grounds. One example: did you know that the naval use of JATO during the war hinged on a crew-chief's slightly off-color trick of loading

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a regulation flying boat off-center so it would lose its race with another boat assisted by JATO?

Nice job.

You'll like it.

THE GOLDEN PROMISE by Stanley Zuber. Pageant Press, Inc., $3.00

STANLEY ZUBER is an expatriate Czech at present living in Canada. This is his first novel in English and he has visualized a world society founded on the Brotherhood of Man. The capital of Canerica, Oremont, is the seat of a world convention to establish a unified language. The chief protagonists are cultured and beautiful, as who wouldn't be with only a couple of hours' mandatory labor to perform? Free time is given over to individual amatory pursuits, and author Zuber gives us countless instances.

There is no dramatic action anywhere in the book, which relies, not too successfully, on conflict for affection between the main characters, becoming far too involved for the small satisfaction gained. The book suffers also from an excessive artiness created by its narration in present tense.

ROCKET MAN by Lee Correy. Henry Holt & Co., $2.75

READING this book, like reading any Heinlein juvenile, fills me with a sort of retroactive envy of modern-day kids. We never had stories like this when we were kids. Yes, we had Tarzan, Tom Swift and John Carter. But how did Carter get to Mars? With the twang of a harp string! *Rocket Man* is a story of a Martian voyage, but the hero gets to Mars on more than a string.

It is a highly believable yarn about a New York lad who has never seen a spaceship, his acceptance at the New Mexico College of Science and Engineering and his appointment in the Space Force. The author is situated at White Sands Proving Ground in New Mexico and very evidently writes with considerable knowledge of his subject. But no dry treatise, *Rocket Man* brings the world of 2002 excitingly near. If you have a teen-ager with starry eyes, this is his ticket to space.

—FLOYD C. GALE

★ ★ ★ ★ ★

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The Claustrophile

By THEODORE STURGEON

Every once in a while, along comes a story like this that turns "common sense" around — and plumps it down squarely on its feet!

"PASS Mr. Magruder the *hominy*, Chris!" His mother's mild, tired voice at last penetrated. "For pity's sakes, son, how many times—"

But Tess Milburn came to his rescue, reaching a thin arm, a sallow hand, to the dish of grits and passing it down to the boarder. Mr. Magruder didn't say anything. He never said any-

Illustrated by CAVAT

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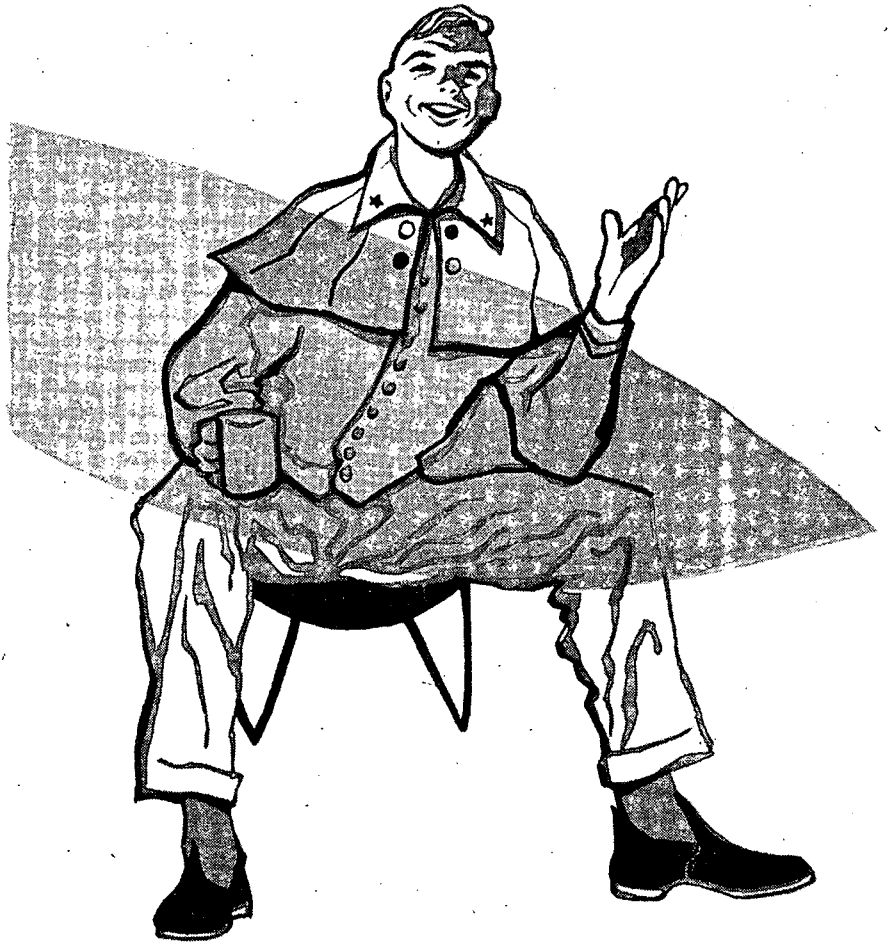

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thing. He never ate hominy grits, either, but that wasn't the point. When Miz Binns set out the dinner, everything had to be passed to everybody, no matter what.

Chris sighed and mumbled he was sorry. He let his mind drift back to the three-body problem. He knew he couldn't solve the three-body problem, but he couldn't be satisfied that it was impossible. Chris Binns was a computer mechanic, a good one, and what he was really pursuing was (a) the right question to ask the (b) right kind of machine.

He frowned at the problem as if he could squeeze an answer out of his brow, and almost had what he wanted when he became aware that he had impaled Tess Milburn with his unseeing gaze and was scowling fiercely at her. She smiled, that brief, weak showing of teeth that she did instead of blushing. It was Chris who blushed, a very little, but already he was sliding back into his thoughts, away from embarrassment, apology, even from the dinner table.

The solution, he thought, lies here: that it's fair to consider all three orbits as ellipses and the final solution as a predictable relationship between the lengths of one focal axis of each. He saw, clearly, a circular cam riding a parabolic track, and the linkage between three such tracks and their cams trembled in the wings of his intellect, ready for the spotlight, the entrance—

Wham!

The screen door slammed back against the verandah wall and a heavy suitcase simultaneously struck the floor by the table.

"Hit the blockhouse!" roared a heavy baritone. "'Ware my tailjets! I'm a-comin' *in*!"

"Billy! Oh, Billy!" cried Miz Binns.

SHE was on her feet with her arms out, but couldn't use them before she was caught up and swung around by the laughing giant who had hit the floor right by the suitcase.

Tess Milburn sat astonished, stopped, like some many-functioned machine when its master switch is thrown; chewing, breathing, blinking, probably heartbeat, certainly cerebration, all ceasing at once in the face of something she had no reflexes for.

Mr. Magruder made a sound that would have been a grunt if it had been vocalized, and bent to pick up the fork he had dropped. With no change of expression, he scrubbed it with his napkin and then went on eating.

Chris Binns sat with his eyes closed, to all appearances as frozen as the girl, but inwardly in an

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agony of activity as he pursued his vanished thought, humbly asking only for their shape and texture, not their whole substance, something he could find again and rebuild on. But it was not possible; the lights were out inside, the doors closed. He blew gently through his nostrils, making up his mind to try again some time, and opened his eyes. "Hi, Bill."

The cadet put his mother down. "Contact, shipmate!" he said thunderously. His hair was crisp, sun-colored; his shoulders bulged under the short, full cape of the space-blue topcoat. Its four buttons, gold, white, green, red for the inner planets, glittered in their midnight background as he flung himself on his brother. Chris, flailing away the accurate and painful pounding of the cadet's greeting, suddenly giggled foolishly, slid his chair back, bent sideways.

"Hi. Hi."

"And if it isn't little old Tessie Heartburn," Billy roared, bestowing an explosive kiss on Tess Milburn's cheek. "And Old Faithful himself, star boarder extraordinary, conversationalist par ex—" His heavy hand was stopped abruptly in its descent to the old man's shoulder apparently by nothing more than Mr. Magruder's quick glance upward. The hand raised again, to be a facetious, almost insulting salute. "Mr. Magruder."

Mr. Magruder nodded once, curtly, and went about the business of eating.

Miz Binns fluttered and clucked and cried. "Billyboy, oh, it's so *good* to, why didn't you *tell* us you were, have you had your, now, Tess, if you'll just move a little this way and, Chris, just, and I'll set you another—"

"You wired you'd be here in the morning," said Chris.

"'Sun always comes up when little Billee walks in," grinned the cadet. "But ack-shull, shipmate, I got a ride in a supply truck, begged off final inspection, and jatoed out." He looked swiftly around the table. "Where's Horrible Horrocks?"

"Billy!" squeaked his mother.

"Miss Horrocks got transferred to another school," said Chris. "Thought we wrote you about it."

"Oh, yes. Forgot. Read through the home gossip real fast," said Billy carelessly.

MIZ BINNS said, "Mr. Magruder found us a new boarder for her room. A Miss Gerda Stein. We thought she'd be settled in by the time you arrived. But you didn't arrive tomorrow, did you?"

Billy laughed and kissed her. "I sure didn't arrive tomorrow.

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I'm going to arrive ten minutes ago."

"Oh-h, you know what I . . . silly-Billy. Chris, come help me."

Chris looked at her numbly for a moment, then got to his feet, jostling the table. Billy laughed and said, "I know you, Mom. You don't need help. You've got secrets." He turned grinning to Tess Milburn. "They're prolly going to talk about you."

"Oh, Billy, you're awful, just awful," his mother said pinkly. Mr. Magruder only steadied his water glass as Chris bumped the table, and then began to butter a roll. Tess Milburn gave her embarrassed lip-flicker, and Miz Binns said, "Don't you listen to that wicked boy, Tess," and shook a fond finger at Billy. She made an abrupt beckoning motion and disappeared into the kitchen.

Chris followed her out. She stood by the door, and when he was in the room, she reached out a practiced hand and stopped the door from swinging. With the ignorance of acoustics apparently possible only to mothers, she began speaking intensely in a whisper which was totally inaudible to him, pointing and flapping toward the dining room, moving her lips too much and her jaw not at all.

"What?" he asked, not too softly. He was mildly irritated.

She cast her eyes up to heaven and shushed him violently. She took his arm and backed across the kitchen, looking past his shoulder all the while as if she expected everyone in the dining room to be pressing ears to the door. "I *said* what did you have to go and have *her* for dinner tonight of all nights, Billy home and all?"

"We had a date. Besides, I didn't know Billy was—"

"It's very inconsiderate," she complained.

"Well, what do you want me to do?"

"It ought to be sort of a family thing, your brother home from school."

The irritation rose to as high as it ever got with Chris—not very high. "Then let's get rid of Mr. Magruder, too."

"That's different and you know it."

He did know it. Mr. Magruder had his own bubble of life within the lives they all led and he stayed unbreakably within it. He communed with himself, his newspaper and his habits, which were so regular that, once established, they required no imagination or conjecture from anyone else in the place. He could talk: but he needn't. They hardly saw him, which led them all to believe that he didn't see them much either.

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"Well, all right," said Chris. "I'll just explain it to her and take her home and come right back."

"You can't, you can't," she fretted. It was what she wanted him to do, but that disqualified it; she wouldn't have that on her conscience.

He shrugged and said, "Then what did you call me out here for?" The question was not rude, but a genuine request for information.

"It's a shame, that's all," she answered. She squeezed her hands together and looked at them unhappily. There seemed to be nothing else for him to say and certainly nothing he could do. He turned to go back to the dining room, but she said, "Why is she here so much, Chris?"

"I don't know, Mom. She—" He made a vague gesture. He really didn't know. Tess dropped around occasionally — hadn't it been to visit Miz Binns, anyway at first? And since she was around so much, he talked to her.

TALKED about what? Again, he couldn't recall clearly. Anything. Whatever was on his mind that could be talked about. His work—some of it; most of it couldn't be expressed in words; it was conceptual, or technical, or mathematical, or all three. His feelings — some of them; most of them couldn't be expressed in words, either; they were too conceptual, or unidentified, or occluded, or all three.

"We go to the movies sometimes," he said at length. And, "It's nice sometimes to have somebody to talk to." He said that, not "talk with." He would have wondered why, but his mother interrupted his thinking the way people always did.

"I know this is no time to discuss it," she said in that urgent whisper, "but what's she want? I mean are you, do you, are you planning to, you know." She finished it like a statement, not a question.

"I—never thought about it."

"You better. The way she acts."

"All right. But like you say, Mom, it's not the time to think about it now." The limited irritation was back again. He turned to the door which exploded inward and struck him a stinging blow on the right pelvis.

"Now what's going on in th' black hole?" Billy roared. "You engineers precessin' my gyros again?"

"Tell Mom what you want to eat," said Chris painfully. He walked stiffly back to the table and sat down. He rubbed his hip covertly. He didn't look at Tess Milburn. He couldn't.

He picked at his food. She

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picked at her food. Mr. Magruder, who drank tea with his meals, drank his tea. And all the while, voices came from the kitchen. Chris was acutely embarrassed, but at the same time he was wondering about the filtering effect of the swinging door, because it passed Miz Binns' high frequencies — the sibilants and the hiss of her stage whisper — and Billy's lows, the woofs, the chest tones — all without transmitting a single intelligible syllable. But when Billy laughed, he understood it. He had heard that laugh before.

Billy bumped the door and surged through without touching it again as it swung open and back. His mother caught it and held it open on her side and bleated, "No, Billy, no!" and Billy laughed again and said, "Don't you worry your pretty little head about it, Mom. Billy fix." Miz Binns stood in the doorway wringing her hands, then sighed and went back in to get Billy's dinner.

Billy plumped down at the table and passed Chris a wide wink. "Well, Tess," he said expansively. "So long since I've seen you. Grown a bit, filled out a bit. Hell around a bit too, I bet." He ignored the silent drop of her jaw and the quick frightened smile that followed it. "You've been walled up in this haymow too long, girl. A little hurry an' noise will do you a world of good. How about you and me, we couple up right after chow and buzz this burg?"

Stricken, she looked at Chris.

Chris said, "Look, Billy, we—"

JUST then, Miz Binns came in with a plate heaped and steaming. Serving dishes on the table not good enough for little Billee, Chris thought bitterly. Cold by now.

"Mom, what do you know! Tess and I got a date for right away!" Billy announced.

"Oh, now, *Billy*!" said Miz Binns in that he's-naughty-but-he's-so-sweet tone. "Your very first night and we haven't had a chance to chat even, and you have so little time, and—"

"Mom," said the cadet cheerfully, "you and I, we have two solid weeks in the daytime to blow tubes and scavenge tanks to our hearts' delight, in the daytime when all good slaves are out digging gold. I hate to deprive you tonight, but gosh, Mom, don't be stingy. Spread it around. It's okay, isn't it, Chris?"

It's okay, isn't it, Chris? All his life, that special laugh and then this question. For a while, when he was nine and Billy was seven, he used to burst into tears when he heard that question. For a while before that and after-

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ward, he had responded with a resounding "No!" And a little later on, he had reasoned, argued, or silently shaken his head. Nothing ever made any difference. Billy would watch him and smile happily through his countermeasure, no matter what, and when he was finished would go right ahead and take, or do, or not do whatever the thing was that he wanted and Chris didn't. He had outweighed Chris since he was four years old, outtalked him always.

But this one time, this one lousy time, he wasn't going to get away with it.

Chris looked at his mother's anxious face, at Tess with a spot of pink on each of her sallow cheeks, a shine in her eyes that he had never been able to put there. *No, by God, no.*

He filled his lungs to say it out loud when the impossible happened. A hard hand closed on his left wrist, under the table. A voice spoke in his left ear: "Let him!" — soft but commanding. He looked down at the hand, but it had already gone. He looked at the face to his left, and Mr. Magruder impassively poured more tea. No one else seemed to have seen or heard.

It was Mr. Magruder, all right, with some knack of directional, perfectly controlled speech, two syllables formed and aimed from the side of the thin dry lips for Chris and Chris alone. It was unusual for the old man to say anything at all beyond "Pass the salt." It was unprecedented for him to enter a conversation, advise.

Chris looked at Tess's troubled, almost beseeching face, the pink, the shine. "You want to go?"

SHE looked at Billy and back to him, and then dropped her eyes. Chris felt rather than saw the slight movement of Mr. Magruder's foot against the floor. He did not touch Chris, but the movement was another syllable of command; there was no question in Chris's mind about that. "Go ahead if you want to."

Mr. Magruder nodded, or simply dropped his chin to watch his hands fold a napkin. Miz Binns said, "I still think you're *awful*, Billy," and did not quite add, "dear boy." Tess Milburn giggled.

Billy began to eat heartily, and what might have been a very strained silence indeed was canceled before it could become a problem.

The doorbell rang.

"I'll get it," Chris said relievedly. He got up and turned to the open, screened doorway.

It must be a trick of the light was the thought that flashed

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through his mind, but there wasn't time to pursue it. "Yes?"

"I'm Gerda Stein. Mr. Magruder—"

"Oh, it's Miss Stein," his mother called. "Come in, do come in."

It had been no trick of the light. Chris opened the screen door and stood back, speechless. He had known there were human beings like this. TV and the movies were full of them. They smiled from magazines and book-jackets, crooned and called and sold coffee, crockery and cosmetics on the car radio. All these are the proper and established places for such creatures; they don't, they just *don't* stand breathtakingly under the porch light on warm summer evenings and then walk straight into your own familiar house.

Someone nudged him out of his daze — Miz Binns. "Dinner's on, I can warm up something, and your room's all, my son from the Space Academy just, no, this is Chris. Billy's the—"

"How do you do, Chris," said Gerda Stein.

"Uh," said Chris. He followed the girl and his mother through the foyer into the dining room.

"You already know Mr. Magruder and *this*, this is Billy."

Billy shot up out of his chair like one of the Base rockets, and again Mr. Magruder steadied his water glass.

"Well-l-l," Billy breathed, a sound like the last descending tones of a mighty alert siren.

Gerda Stein smiled at him and Chris could see him blink. "No," she said in answer to something Miz Binns was saying, "I've had dinner."

Chris came around the table and found his eyes on Tess Milburn's face. It was wistful. "And this is Tess Milburn," he blurted. In that instant of empathy for the ignored girl, so shadowed by the great light cast by the newcomer, he fairly shouted. He looked like a fool and knew it.

GERDA STEIN smiled warmly and took Tess's hand. Surprisingly, Tess smiled, too, and went on smiling after she had been released—a real smile, for once, substitute for nothing.

Chris felt embarrassed to see it — a strange embarrassment, starting with the consciousness of how hot his ears were, then going through a lightning intuitive chain to the insight that he was embarrassed when he made someone happy, and that it had been worth the effort of thought because it was so rare, and then the conclusion that anyone who made people happy so rarely couldn't be worth much. Which led him, of course, to look at his younger brother.

Billy had stopped chewing

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when Gerda Stein came in and he had not swallowed. He seemed for these long seconds as preoccupied as Chris was most of the time, and the slight flick of his blue eyes from Tess's face to Gerda Stein's indicated the source of his deep perplexity. And suddenly Chris saw it, as if it had been imprinted across the golden tan of the cadet's bland forehead in moving lights.

If Billy now went on with his idea of a date with Tess, this vision would be left here with Chris and Mom and Mr. Magruder and — very soon now, Mr. Magruder and Mom would retire, and . . .

On the other hand, Billy shared with his mother a deep reluctance to face anyone with "Beat it, I don't need you around," or any variation thereof.

Chris sat down slowly before his cold dinner and waited. He felt some things which taught him a great deal. One of them was that it was good to be involved with Billy in a situation where Billy couldn't win. If Billy backed out of the date, Chris would go; if not, not; and by this Chris learned that the date didn't really matter to him. This was a great relief to him. His mother's questions had disturbed him more than he had known until he felt the relief.

Billy sighed through his nostrils and finally swallowed his mouthful. "I'm backin' off my gantry, girl," he said to Tess, "so start the count-down."

Chris caught a quick puzzled flicker of expression on Gerda Stein's face. Miz Binns said, "He always talks like that. He means he and Tess are going out. Space talk." Chris thought she was going to run and hug him, but with obvious effort she controlled her feelings and said to Miss Stein, "Well, come settle in the parlor until I can take you up to your room."

"Have fun, kids," said Chris, and got up and followed into the parlor.

In the foyer, he turned and glanced back. He met Mr. Magruder's penetrating gaze, a startling experience for one used to seeing only the man's cheek or lowered eyelid. He wished he could get some message, some communication from it, but this time he couldn't. He felt very strange, as if he had been given absolute alternatives: chaos, or obedience to an orderly unknown. He knew he had chosen obedience and he was inexpressibly excited.

"ALWAYS wanted a spaceman in the family," Miz Binns was saying proudly to Gerda Stein, "and Billy's always wanted to be one, and now look."

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From the couch, Gerda Stein said politely, "He seems to be doing very well."

"Well? Why, he's in the top twentieth of his class, nobody ever did that before except one fellow that was an air marshal's son, Billy's born for it, that's what he is, born for it."

Chris said, "He was running around in a space helmet when he was two years old."

At his voice, Gerda Stein turned and smiled at him. "Oh, hello."

"I declare I don't know how I could've had two boys so different," said Miz Binns. "Years, I just couldn't guess what Chris here would wind up doing, he's nicely settled down though, fixing adding machines."

"Computers," Chris said mildly.

"Really! That must be very interesting. I use a computer."

"What kind?"

"KCI. It's only a very simple little one."

"I know it. Mechanical binary. Clever little machine," said Chris and, to his intense annoyance, found himself blushing again.

"Oh, well, you have something in common," said Miz Binns. "I'll just scoot along upstairs and see that your room's just right. You keep Miss Stein happy till I call, Chris."

"Don't go to any—" the girl began, but Miz Binns had fluttered out.

Chris thought, *we have something in common, have we?* He was absolutely tongue-tied. Keep Miss Stein happy, hah! He flicked a glance at her and found with something like horror that she was watching him. He dropped his eyes, wet his lips, and sat tensely wishing somebody would say something.

Billy said something. Leaving Tess standing in the foyer, he stepped into the parlor, winked at Gerda Stein and said to Chris, "I heard that last test-firing of yours, shipmate — 'Have fun!' Well, *you* have fun." He looked at Gerda Stein with open admiration. "Just remember, brer pawn — first move don't win the game; it's only an advantage. You told me that yourself."

"Shucks," Chris said inanely.

"I'll see *you* soon," said Billy, stabbing a forefinger toward her.

"Good night," Gerda Stein said courteously.

BILLY left the room, bellowing, "C'mon, Venus-bird, let's go git depraved." Tess Milburn squeaked, then tittered, and they went out. Miz Binns came downstairs just then and stopped at the front door.

"You Tess Milburn," she called in what she apparently hoped was mock severity, "you don't go

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keepin' that boy up until all hours!" From the warm dark came Billy's rich laughter.

"That boy," breathed Miz Binns, coming into the parlor, "I do declare, he's a caution, come on upstairs now if you want to and see your room, Miss Stein. That your bags out there on the stoop? Chris, just nip out and get Miss Stein's bags in like a good boy."

"All right, Mom." He was glad to have something to do. He went out and found the bags, two of them, a large suitcase and what looked like an overnight case. The suitcase was no trouble, but the little one weighed perhaps fifty pounds and he grunted noisily when he lifted it.

"Here," called Miz Binns, "I'll—"

"No!" he barked. "I can handle it." Mom wouldn't learn, couldn't learn that a man might be humiliated in front of strangers.

He lifted the bags abruptly, knowing just how Bill — how a fellow could walk, sing, surge them up to the landing, lift and surge again to the top, breathing easily. He took a step and swung, and got all tangled with the screen door, and banged the overnight case noisily against the jamb; his arms and back wouldn't do the easy graceful thing his mind knew how to do with them. So he didn't lift and swing, or breathe easily, but plodded and hauled, and came into the north bedroom blowing like a grampus. All in the world he hoped for was that he wouldn't catch Gerda Stein smiling.

He caught Gerda Stein smiling.

He put the bags down by the bed and went blindly back down the stairs. Mr. Magruder was just then pacing his leisurely way into the parlor, his newspaper under his arm, and Chris became painfully aware of how hard he was still breathing and how it must look. He controlled it and fled to the dining room.

He stood against the table for a long moment, pulling himself together, and then, with his glazed eyes fixed on the dish of cold hominy grits, slid gratefully into the familiar aloneness of his conjectures.

HOMINY is corn, is dry before cooking, absorbs moisture softens swells steams gets cold loses moisture gets gummy if left long enough would set like concrete anyway until more moisture came along. Deeper he went into a lower level, seeing the hydroscopes, the thirsty molecular matrices, yearning and getting, satiated, yielding, turning again to thirsty horn. Down again to a lower level and the awareness all about him of the

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silent forces of the capillary, the unreasonable logic of osmosis, the delicate compromise called meniscus.

Water, water, everywhere . . . in the table-legs and the cloth, water fleeing from the edges of a pool of gravy, flying to the pores of a soda-cracker, all the world sere and soggy, set, slushy, slippery and solid because of water.

DOWN in this level there were no pipestem arms nor unready tongues nor fumblings for complex behavior codes known reflexively to all the world but Christopher Binns, and he was comforted.

"What you *dreaming* about, boy, I do declare!"

He came up out of it and faced her. He felt much better. "I'll give you a hand washing up, Mom."

"Now you don't have to do any such of a thing, Chris. Go on into the parlor and chat with Mr. Magruder."

He chuckled at the thought and began to stack the dirty plates. His mother went into the kitchen to clear the sink, shaking her head. Her woeful expression, he divined, was only superficial, a habit, an attitude; he could sense the core excitement and delight with which Billy always filled her.

Billy can do no wrong; he syllogized—

Billy does everything well; THEREFORE:

Billy does no wrong well.

He carried the plates into the kitchen.

"I'm going to bed, dear."

"Good night, Mom."

"Thanks for helping. Chris—"

"?"

"You're not angry at Billy, are you, about Tess, I mean?"

"Why should I be angry?" he asked.

"Well, I'm glad, then." She thought he had answered her. "He doesn't mean it, you know that."

"Sure, Mom." He wondered dispassionately how her remark could possibly be applied to the situation, and gave up. He wondered also, with considerably more interest, how and why he had been aware that while he was in the kitchen, Gerda Stein had come down and re-entered the parlor and that Mr. Magruder had gone up to bed. He wondred also what use the information would be to him, he who had the Sadim touch. The Sadim touch was a recurrent whimsy with him; it was Midas spelled backward and signified that everything he touched, especially gold, turned to — "Shucks."

"What, dear?"

"Nothing. Good night, Mom."

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PALELY she kissed him and tiredly toiled up the stairs. He stood by the dining room table, looking at the cut glass sugar-bowl, now turned out to pasture in its old age and holding two dozen teaspoons, handles down, looking like something a robot bride in a cartoon might carry for a bouquet. He scanned the orderly place-setting around the table, the clean inverted cups mouthing their saucers, each handle a precise sixty degrees off the line of the near table edge; the bread plates with the guaranteed 14K 100% solid gold edging absent from every convexity, wanly present in the concave.

And he couldn't lose himself in these things. Below the level of the things themselves, there was nowhere he could go. Something had closed his usual ready road to elsewhere and he felt a strange panic. He was unused to being restrained in the here and now, except on company time.

All right, then, he admitted.

He walked slowly through the foyer and into the parlor. Gerda Stein sat on the couch. She wasn't knitting, or reading, or doing anything. Just sitting quietly, as if she were waiting. What on Earth could she be waiting for?

He looked for the right place to sit, a chair not too close (not because he was afraid of being "forward" but because he would have absolutely no resources if she thought he was) and not too far away (because it was late and everyone was in bed and they would have to keep their voices low. In case they talked).

"Here," she said, and put her hand on the cushion beside her.

In his own house, he said, "Thank you, thank you very much," and sat down. When the silence got to be too much for him, he faced her. She looked back gravely and he turned again and stared at the print of the sentinel at Pompeii which had hung there since before he was born.

"What are you thinking?"

You're the most beautiful thing I've ever seen. But he said, "You comfortable?" He considered his statement, hanging there untouched in the room, and added with something like hysteria, "In your room, I mean."

She shrugged. It conveyed a great deal. It was, "Quite what I expected," and "There's certainly nothing to complain about," and "What can it possibly matter?" and, more than anything else, "I won't be here long enough to have any feelings about it one way or the other."

ANY of these things, spoken aloud by anyone else, would have made him wildly defensive, for all he may not have been

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able to express it. Spoken by her, perhaps it would be different. He couldn't know. But transmitted thus mutely — he had nothing to say. He put his hands together between his knees and squeezed, miserable and excited.

"Why did your brother go to the Space Academy?" she asked.

"Congressman Shellfield got him the appointment."

"I didn't mean that."

"Oh," he said, "you mean *why*." He looked at her and again had to look away. "He wanted to, I guess. He always wanted to."

"You can't always want to do anything," she said gently. "When did it start?"

"Gosh . . . I dunno. Years back. When we were kids."

"What about you?"

"Me?" He gave a short, uncertain laugh. "I can't remember wanting anything specially. Mom says—"

"I wonder where he ever got the idea," she mused.

He guessed she had been thinking about Billy up in her room and had come down to find out more about him, had sat here waiting until he could come and tell her more. He made a sad, unconscious little gesture with his hands. Then he remembered that she had asked a question. When he didn't answer questions, why did she just wait like that?

"We used to play spaceman before Billy could talk," he recalled. He glanced her way and laughed surprisedly. "I'd forgotten all about that. I really had."

"What kind of games?"

"Games, *you* know. Rocket to the Moon and all. I was the captain and he was the crew. Well, at first I was the . . . I forget. Or I was the extraterrestrial and he was the explorer. Games." He shrugged. "I remember the take-offs. We'd spread out on the couch and scream when the acceleration pressed the air out of our lungs. Mom didn't much like that screaming."

She laughed. "I can imagine. Tell me, do all spacemen talk the way he does?"

"You mean that 'shipmate' and 'gantry' and 'hit the blockhouse'?"

He paused for such a long time that she asked quietly, "Don't you want to tell me?"

HE STARTED. "Oh, sure, sure. I had to think. Last year, Easter vacation, he brought another cadet with him, name of Davies. Nice fellow, quiet, real black hair, sort of stoop-shouldered. I'd heard Billy talking that way before, thought it was the way to talk. But when I used it on Davies, he'd just look at me—" unconsciously, Chris was mimicking the wonderstruck Davies—"as if I was crazy. Harmless, but crazy." He gave his soft,

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embarrassed chuckle. "I guess I didn't do it right. I guess there's just exactly a right way of saying those things. You have to be a cadet to do it."

"Oh? Do all the cadets talk that way?"

"Davies didn't. Not to us, anyway. I never met any others."

"Maybe Billy's the only one who talks that way."

Chris had never considered the possibility. "That would sure sound funny at the Academy."

"Not if he never did it there."

Chris made a sudden awkward movement of the head, trying to brush away the idea. Stubbornly, it wouldn't brush. It was, after all, the first hypothesis his kind of logic had been able to accept for Cadet Davies' odd reactions. In itself, this was welcome, but it opened up an area of thinking about his brother he disliked to indulge in.

He said as much: "I wouldn't like to think of Billy that way, talking like—like when we were seven, eight years old."

"Why not? How do you like to think of Billy?"

"He's—getting what he wants. Going where he wants to go. He always has."

"Instead of you?"

"I don't know what you mean." *Or,* he added silently, *why you ask or why you want to know any of this.* He shifted his feet and turned to meet that disconcerting, warm, open, unjeering smile. "What do you want me to say?" he demanded, with a trace of irritation.

She settled back slightly. He knew why; she was going to wait again. He wouldn't be able to cope with that, he knew, so he said quickly, "It's all right for Billy to be that way. He can do things I—other people can't do. I'm not mad about that, not mad at him. There's nothing to be mad at. It would be like—being mad at a bird because it had wings. He's just different."

He realized that he had wandered from the area of her question, so he stopped, thought back, located it. Billy gets what he wants—*instead of you.*

He began again: "It's all right for Billy to get what he wants, even if it's something I happen to want, too, and don't get . . . How can I explain it?"

RISING suddenly, he began pacing, always turning away from her, passing her with his eyes downcast. It was as if the sight of her chained him, and with his eyes averted, he could run with his own thoughts again.

"It's as if Billy wasn't something separate at all, but just another side of me. Part of me wants to go to the Academy — Billy goes. Part of me wants to

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go out with Tess, not just to the movies, but *out* with her, make her feel — you know. Well, Billy does it. Or talk like Billy, look like him, all that racket and fast gab." He laughed, almost fondly. He sounded, then, just like his mother. "Sometimes he's a nuisance, but mostly I don't care. There's other things, lots of them, that I do that Billy couldn't. There's another part of me that does those things."

He allowed himself another quick look at Gerda Stein. She had turned to follow his pacings. He was in the far corner of the room and she sat with her cheek on her bare forearm, her head inclined as on a pillow and her hair hung down over the arm of the couch, heavy and bright.

"What things?" she asked.

He came back then and sat down beside her. "It's hard to say. It's very hard to say."

He sat for a long time performing the totally unprecedented task of verbalizing what he had never given words to before, the thoughts and feelings, ideas and intuitions so intimately, so mutely his own; all the things he set aside when he talked to Tess, all the things which occupied and preoccupied him during that ninety per cent of his life when he must commune and could not communicate. He sat there striving with it while she waited. Her waiting was no longer a trial to him. He realized that, but would not think about it. Yet.

"The nearest I can get to it," he said when he was ready, "is this: I've found out something that's at the root of everything anyone can think about, something that all thinking gets to sooner or later, and starts from, too. One simple sentence . . . Now wait." He put his simple sentence in front of his mind and looked at it for a long studious time. Then he spoke it. "Nothing is always absolutely so."

He turned to her. She nodded encouragingly but did not speak.

"It's a—help. A big help," he said. "I don't know when I first found it out. A long time back, I suppose. It helps with people. I mean the whole world is built on ideas that people say are so, and about all the troubles people have are caused by finding out that one thing or another around them just *isn't* so. Or it isn't so any longer. Or it's almost so, but not absolutely."

ON receipt of another encouraging nod from Gerda Stein, "Nothing is always absolutely so," he said again. "Once you know that, know it for sure, you can do things, go places you never thought about before. Everything there is gives you some place to

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go, something to think about. Everything. Take a—a brass rivet, say. It's brass; you start with that. And what's brass? An alloy. How much change of what metal would make it not be brass? Given enough time, would radioactive decay in one of the metals transmute it enough so it wouldn't be brass any more?

"Or take the size. How big is it? Well, doesn't that depend? It's smaller after it's been used than when it was new. What color is it? That depends, too. In other words, if you're going to describe to me exactly what that rivet is, you're going to have to qualify and modify and get up a list of specs half as long as a tide chart and half as wide as Bowditch. And then all I have to do is sweat one drop of sweat on that rivet and wait twenty-four hours and you'll have to revise your specs.

"Or drop down a level. Pass a current through my rivet. The copper has this resistance and the zinc has another and a trace of iron has still more. What's the velocity of electromagnetic force through all this mess, and what kind of arguments do the atoms have about it? Or use a strong magnetic field. Why—really why, aside from 'It just happens'—is the copper so shy magnetically in brass and so out-and-out ferrous in alnico?"

He stopped to breathe. He breathed hard. It recalled to him how she had smiled when he had puffed into her room with the bags.

He realized suddenly that he had been altogether wrong in his estimate of that smile. He had feared it because he was ready to fear any smile. Now he knew that it was not just any smile, but the one he saw now —warm, encouraging, much like the smile which Tess Milburn had found and kept.

"What I'm driving at is, with this idea, that nothing is always absolutely so. You don't really need people or anything about them — movies, TV, talk; anyway, not for hours at a time, days. You don't have to hate people; I don't mean that at all. It's just that people's worries don't matter so much. People's troubles you can answer every time by saying 'Nothing is always absolutely so,' and go on to something else.

"But when you see that the wet half of a towel is darker than the dry half, or hear the sound of a falling bomb descending when all reason says it ought to rise in pitch, and you know where you're going to start: *Why?* and where you'll wind up: *Nothing is always absolutely so*, and challenge yourself to find the logic between start and finish — why,

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then you have your hands full; then you have a place to go."

"ISN'T that a sort of escape?" the girl asked quietly.

"Depends on where you're standing at the time. Mixing yourself up with human problems is maybe escaping from these other things. Anyway, these other things *are* human problems."

"Are they?"

"E=MC^2 turned out to be. First it had to be thought out, with the thinking all the reward in sight, and after that it had to be applied, but don't tell me it isn't a human problem! Someone, for instance, had to put pineapple rings on a ham before baking, for the very first time! Or eat a raw oyster. That seems to me to be the kind of thinking I'm talking about." He brought his hand down for emphasis on the arm of the couch; it fell right on hers. "That's why Billy's at the Academy, because someone, and then some people, and then mankind began to want space."

She curled her fingers around his hand, not quite clasping it, and looked down contemplatively. "A good hand," she said in an impersonal voice, and gave it back to him.

"Huh? It's crummy — solder burns, ground-in bench dirt . . ." He held it as if it no longer completely belonged to him. *And it doesn't,* he thought with a start.

"Tell me," she asked lazily, "is the Academy's way the right way to get to space?"

"The only way," he said positively, and then, because his reason caught up with his honesty, he amended, "that's being tried."

Suddenly she sat up straight, leaned forward. She tossed her hair back as she turned toward him, with a gesture he knew he'd never forget.

She said, "I wonder about that. I wonder about fine-tuning men physically until they're all muscle and bounce, just to coop them up in a cabin for months on end. I wonder about all the training in astrogation when even primitive computers can do better, and no training at all in conversation, which we don't have a machine for yet. I wonder at the thinking behind hundred per cent male complements on those ships. I wonder about 10G stress tests on men who will have to develop an inertialess drive before they can think about *real* space travel. But most of all, I wonder — I worry — about putting extraverts on spacecraft."

She settled back again, looking at him quizzically.

"All right," he said, "I can play that game. Suppose I took every one of those wonderments of yours and turned them over to look at the other side. What

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would you do instead — man your ships with soft-bellied bookworms with no reflexes? Train them in philosophy and repartee in an eighteenth-century salon? Teach them to rely on their computers and never know what the machines are doing? Put women on the ships for them to get jealous about and fight over? Lay in a pack of brooding introverts, neuroses and all?"

"Neuroses," she repeated. "I'm glad you mentioned them. I imagine you're pretty sure that humanity is by and large a pretty neurotic species."

"Well, if your definition—"

"Never mind the specs," she said, interrupting him.

THERE was a new, concise ring to her voice that affected him much as had the first sight of her, standing out there under the porch light. Breathless, he fell silent.

"Yes, humans are neurotic," she answered her own question. "Insecure, disoriented, dissatisfied, fearful, full of aggressions against their own kind, always expecting attack, always afraid of being misunderstood, always in conflict between the urge to fly like a bird and the urge to burrow like a mole. Now why should all this be?"

He simply shook his head, bewildered.

"You have a very special mind, Chris, with your hypotheses and your lower levels and your quarreling atoms. Can you take a really *big* hypothesis?"

"I can try."

"Hypothesis:" she said, making it sound like a story title. "There is a space-traveling species that achieved space flight in the first place because, of all species, it was the most fit. It established a commerce throughout a system, systems of systems, a galaxy, another. It had an inertialess faster-than-light drive, a suspended animation technique, sub-etheric communications — why go on listing all its achievements? Just say it was technologically gifted and its gift was only one facet of the whole huge fact that it was born and bred for space travel.

"Now, expanding as it must, it spread itself thin. It compensated as well as it could by learning to breed fast, by reducing to the minimum the size of its crews and increasing the efficiency of its ships. But each of these expedients only increased the spread; there's an awful lot of business in this universe for the sole qualified species.

"The only way out was to locate planets similar to their own home world and seed them with people. That way, crews could be formed from one end of the explored universe to the other. The

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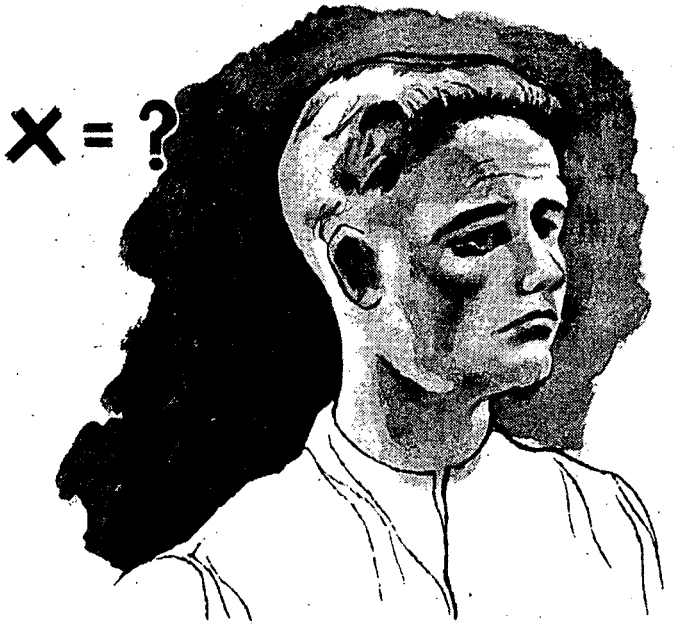

best way to do this would be to put down large colonial ships on suitable planets, complete with everything they might need to raise six or seven generations while acclimating to the planet. Thereafter, the colonies could be self-sustaining. That's the overall pic—uh—hypothesis. Are you still with me?"

"N-no," said Chris dazedly, "but go on."

She laughed. "Now suppose one of these big colonial vessels had some trouble — an impossible series of unlikely happenings that threw it out of control, while in faster-than-light flight with the personnel in suspended animation and all automatic orientation gear washed out. Centuries go by. If it encounters a galaxy, it will search out the right kind of planet, but it doesn't encounter anything until—"

Her voice died down. Chris looked at her, bent closer. Her eyes were closed and she was breathing very slowly, very deeply. As if she sensed him near her, she opened her eyes suddenly and gave a queer twisted smile.

"Sorry," she murmured, and took his hand so he would not move away. "This is the part I

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—don't like to think about, even —hypothetically."

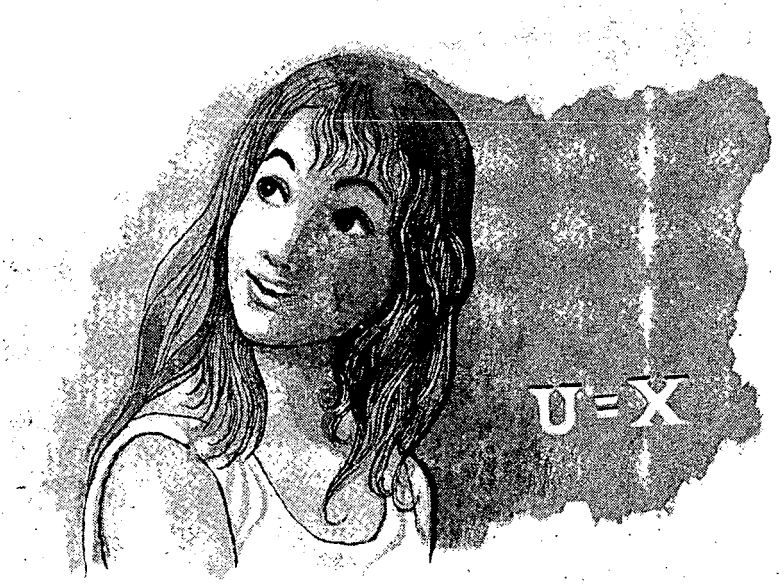
FOR a moment, all the senses in Chris's body seemed to concentrate and flow together, to lie ecstatic in the hollow of her hand. Then she began to speak again.

"The ship was old, old by then, and the machinery badly butched. It found a galaxy all right, and, in time, a planet. It snapped into normal space; it started the gestators . . ."

"Gestators?" he echoed blankly.

"Artificial placentae. Easier to carry fertilized ova and nutrients than children or even parents. But the revitalizers, for the suspendees — they failed, about ninety-eight per cent of them."

She sighed. It was a mourning



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sound. "No one knows what happened, not all of it. No one . . . should. The ship wasn't designed to make planetfall; it was an orbital, true-space vessel. They landed it, somehow, the few that were left. The crash took more lives—most, perhaps. The scout ships, the ferries, neatly stacked in the gimbal locks—all wrecked. Stores, *books* — call them books, it's simpler — everything lost. And all that was left, all that lived . . . a couple of hundred babies, helpless, hungry, many hurt, and a handful of maimed adolescents to care for them.

"The ship didn't last long; it wasn't built to take what a corrosive oxygen atmosphere could do to it. The boats hadn't been coated and they went, too, in weeks.

"But this is a hardy breed. Most died, but not all. Perhaps, to some, this would be a fascinating study in the old heredity-environment haggle; personally, I wouldn't have the stomach for it. They lost their language, their culture, their traditions and age-old skills. But they kept their genes. And in time, two prime characteristics showed through their savagery, come straight from their heritage: They bred fantastically and they reached for the stars.

"Unlike any other civilized species, they would breed beyond the ability of the land to support them, breed until they had to kill one another to survive at all — a faculty developed through eons of limitless *lehbensraum*, but a deadly quality for a planet-bound race. It decimated them and they outbred even their own deadliness, so that in a brief time —twenty, twenty-two thousand years—they went from the dozens to the billions, threatening to carpet the planet with their bodies. Meanwhile the suicidal other-worldly urge to breed colored their mores and their literature until it stood unique among the galactic cultures.

"But they reached for the stars. They excused their hunger for the stars in a thousand ways, and when they grew too rational for excuses, they made no more and still went starward.

"And now, today, they are on the verge of it, by themselves, struggling along in their own terrified, terrifying way, ignorant of their origins, mystified by the drive in their blood . . . yes, Chris, a neurotic people."

AFTER a time, Chris said, "How did you—uh—where did you hear—uh—read this . . ."

She laughed and looked down again at his hand. She patted it with her free one and then held it for a moment in both. "Hypothesis, remember?"

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He shuddered, the late, large impact of her vivid voice and the pictures it evoked. It was somehow a delightful sensation.

"Will . . . did they ever find their own people?"

"They were found. Contact was made — oh, four hundred years ago."

CHRIS exhaled explosively. "Then it isn't—" He looked closely at her face. Even now, he was afraid of what her laughter might be like. " . . . Earth?" he finished in a small voice.

"Isn't it?"

"Four hundred years . . . everybody would know."

She shook her head soberly. "Consider: twenty thousand years of genetic drift, mutation, conditioning. The old drives may be there — statistically, and in the majority. But figure it out for yourself — what are the chances of a prototypical spaceman after all that time? You'd find most of the desirable characteristics in some, some in most. You'd find all of them as a statistic, in a numerical sample. But if you were a captain looking for a crew, how would you find the man you wanted?"

"You already described the spacebound neurotic."

"It can't be just any neurotic, only because he's neurotic! He has to be a very special — very *specialized* neurotic indeed. They're rare."

"Then you'd have to announce yourself, advertise for what you wanted, have screenings, a training program—"

"Don't you know what would happen if all the world found out about the spaceman?"

"There'd be a riot, I guess—everyone wanting to go."

"There'd be a riot, all right," she said sadly, "but not that kind. There's one thing mankind is afraid of, sight unseen. It's a fear born of his slow growth on a strange and hostile planet, with only his brains as weapons and shelter."

"One fear—"

"The alien. Xenophobia—virtually a racial disease. All through your history, you have it, and it's always there under the surface, waiting to break out again like an ugly fire. There would be an attack on the spacemen themselves, and then a witch-hunt the like of which even this planet has never seen before. First the ones who fully qualify as spacemen, though they were born here; next, anyone who has some of spaceman's characteristics — and everyone has!"

"I don't believe it!" Chris protested hotly. "I don't think human beings would go that far, be that stupid!"

"Humanity lets itself live on

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bare sufferance as it is," Gerda Stein said sorrowfully. "No, publicity isn't the answer."

"Then what's been going on these four hundred years?"

SHE said, "Surveys. Spaceman still desperately needs recruits, especially in this galaxy, which is new, unexplored, practically. So spacemen come here, live among you, and every once in a while a candidate is spotted. He's observed for — well, long enough to determine if he's the right kind."

"What's the right kind?" he asked.

"You gave a pretty good description yourself a while ago."

"The introspective neurotic?"

"With special mechanical and computing skills, and an inner resource that needs no books or teleplays or joy-riding or depravity to keep from being bored."

"And what happens when someone like that turns up?"

"The — agent reports, and after a while the space captain shows up. If the candidate is willing, he goes. He disappears from Earth and just goes."

"He has to be willing."

"Of course! What good would he be if he was shanghaied?"

"Well," said Chris primly, "that's something, anyway."

She did laugh at him, after all. It didn't hurt. While she was laughing, he was so disarmed that he asked her a question. He hadn't meant to; it just slipped out.

"Why did you want to know all those things about Billy?"

"Don't you have any idea?"

He looked at his hands. He said, a little sullenly, "You seem to think Billy never started anything by himself. You don't seem to think he can. You—well, I got the idea you think he gets pushed into things." He turned to her briefly. "By *me*, for Pete's sake!"

"And you don't think so?"

He gave a snort, embarrassed and negative. "If I could believe that, I — I could believe everything else you've been saying."

She smiled a very special smile. "Why don't you try it, then, and find out who's right?"

Quietly, for a long time, he thought.

"I will," he whispered at last. "I will." He straightened and looked at her. "Gerda, where do you come from?"

She rose and, spectacularly, stretched. "A little place called Port Elizabeth," she said. "Not very far from here. Port Elizabeth, New Jersey."

"Oh."

She laughed at him again and took his hand. "Good night, Chris. Can we talk some more about this?"

He shook his head. "Not until

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I really—*really* think about it."

"You will."

HE WATCHED her cross the foyer to the stairs. She put one hand on the newel post and waved to him, crinkling her eyelids in a way he would find as unforgettable as that turn and sweep and uncovering when she threw back her hair to face him. He found himself quite incapable of a wave or anything else.

For a long time after he heard her door close, he stood in the parlor looking at the stairs. At last he shook himself, turned out the lights in the parlor and all but the night lamp in the foyer. He turned on the porch light for Billy and went upstairs to the room they shared.

He undressed slowly and absent-mindedly, looking around his room as if he had never seen it.

The orrery which he had started to build when he was ten, and which Billy had taken away from him and finished, all except the painting, which he did after all because Billy grew tired of it.

The charts of the Solar System from the celestial north (over Billy's bed) and from the south (over his). The Smithsonian photo-map of the Moon, carefully pasted to the ceiling, which Billy had moved to another spot, apparently because he hadn't been consulted, so Chris had had to plaster up the first spot. The spaceships and Billy's toy space helmet. (Hadn't it been Chris's, for his twelfth birthday? But somehow "your" helmet had become "our" helmet and then "mine.") Anyway, it was all space stuff, everything in sight, and space meant Billy, so somehow it was all Billy. And Billy not back long enough even to open his bag.

Chris got the pattern suddenly, but very late. Years late. He lay back on his bed and grinned, then got up and switched on the light over the desk. He went into the lavatory and got a big cake of white soap and spread newspaper on the desk and went to work on the soap with a pocketknife, carving a cat's head.

BILLY came in about two, clumping heavily, yawning noisily on the stairs. He banged into the room and kicked the door closed.

"Now you didn't have to wait up, shipmate," he said facetiously.

"I wasn't." Chris got up from the desk, put the knife down, and crossed to his bed.

Billy flung off his cape and tossed it on the easy-chair. "Well, I tilted that chick clean off the orbit, shipmate. You can take down your meteor screens. She won't be dustin' around you *no* more."

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"Why do me a favor like that?" Chris asked tiredly.

"You and Mom, you mean," said Billy, shucking out of his space boots. "You hadn' oughta worry Mom like that."

"Like what?"

"She computed you an' li'l Heartburn on a collision orbit. Well, Billy fix. She'll have nothin' in her viewplates from now on but Space Academy blue." He went to his cape and arranged it carefully on the chair-back. "It's not me, y'unnerstan', shipmate, not me pers'nal. It's just no one man can compete against the Space Corps. Not on a Venus sighting anyway," he said with labored modesty. Chris could see his mind wandering away from the subject before he had gotten the whole sentence out. "How'd you make out?"

"Make out? Oh—Miss Stein."

"Oh — Miss Stein. Fair warning, shipmate — that there's Target the Next."

CHRIS lay back and closed his eyes.

"You ever satisfied?"

"Look, shipmate," Billy said over his shoulder, "'satisfied' didn't come inboard yet. These things I play straight and square, gyros on the ship's long axis and a-pointin' down the main tube. So get the brief, mudbound: tonight's mission was for you and for Mom. Tomorrow's for me. Over." He banged open his kit and pulled out a pajama zip-on. It was then that the carved bar of soap caught his eye. "What you riggin', shipmate?"

"Nothing," said Chris, as tiredly before, but watching like a lynx.

"Sculptin' soap. I heard of it. Often wondered." He bent over the work and, suddenly, laughed. That laugh. "Hey, high time we got a new hobby. This ain't bad for a beginner." He rocked the desk lamp back and forth to get shadows. "Think I'll square it away a bit for you. It's okay, isn't it, Chris?"

"I was going to fin—"

"That's all right, don't let it worry you. You won't know I touched it." He had stopped listening to Chris while Chris spoke, stopped listening to himself before he himself finished. He leaned over and flicked the carving with the point of the knife, then again. He bent closer, considering. Abruptly he sat down, got his elbows solidly planted on the desk, pulled the light closer and went to work.

Behind him, Chris nodded once, then smiled himself into his thoughts, level on lower level — the very first being the knowledge of who did start (and usually complete) things — until he slept.

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IT WAS Mr. Magruder's habit to take no breakfast at home, but to mount his stately and ludicrous old three-tone 1958 Buick and drive into town, where he would have tea sent up to the office. He did these things at such an unbearably early hour that his tacit offer of transportation to any who wanted it was almost always refused.

But this was an exception. Miz Binns greeted the change with polite protests but inner satisfaction; Billy was sleeping late, having been doing something up in the room until all hours, and now she would be able to take her time and compose a really fabulous tray for him. And Chris, looking uncharacteristically bright and cheerful for that hour, held Gerda Stein's elbow for her as she negotiated the front steps, and opened the ancient Buick's chrome-slashed door for her.

As soon as they were away from the curb, Chris took a deep breath and said, "I'm sure you won't be needing Miss Stein today at all, Mr. Magruder."

The old man said nothing and did nothing but continue to drive at his less-than-lawful and undeviating rate.

Gerda Stein turned expressionless and watchful eyes to Chris's face. Nobody said anything for a two-block interval.

"Also," said Chris firmly, "I'd appreciate it if you'd have someone in your office call my plant around 9:15 and tell them I won't be in today. I could do it myself, but I want it off my mind right now."

Mr. Magruder took his foot off the accelerator and let the car glide to a stop at the curb before applying the brakes. It took a long silent time. Chris opened the door and handed Gerda Stein out. He shut the door. "Thank you, Mr. Magruder."

As soon as the car was out of sight, Chris Binns began to laugh like a fool. Gerda Stein held on to him, or sturdily held him up, and after a time laughed, too.

"What was that for?" she asked when she could.

Chris wiped his eyes. "Damn if I know. Too much of . . . too much all at once, I guess." Impulsively he reached out and ran his hand gently from her temple to the hinge of her jaw, not quite cupping her chin.

She held quite still while he did this, and when he dropped his hand, she said, "Well, hello."

He wished he had something like it to say, but after two trials all he could utter was, "B-breakfast," so they laughed together again and strode off, Chris holding her hand tight to the inside of his elbow. She walked well with him, long steady paces. "Can you

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dance in a spaceship?" he asked.

"With slow rolls," she twinkled.

They had waffiles with cherry syrup and the best coffee in the world. He watched his thoughts and smiled, and she watched his face. When they had finished and fresh coffee arrived, he said, "Now, questions."

"Go ahead."

"You say the colony ship was wrecked here about twenty-five thousand years ago. How do you account for Swanscombe and Pekin and Australopithecus and all?"

"They're indigenous."

SHE touched his hand for emphasis. "Chris, if you'll think on galactic terms, or larger, you'll be quite satisfied. When one of those seeking mechanisms is set for a planet of this type, it isn't satisfied with an *almost*. And in multigalactic terms, there's plenty of choice. Homo sap, or something very like him, grows on many of those planets, if not most. In Earth's case, they may even have interbred. We're not sure, but there have been cases. Whether or not, though, Spaceman's presence here was no boon to the other races. He's a pretty nice fellow in his own element, but he makes for a fairly critical mass when you let him pile up."

"All right. Now a little more about this neurosis business. Why should Spaceman be so out of kilter on a planet? I'd think of him as pretty adaptable."

"He certainly is! He survived for twenty-five thousand years here, didn't he? But about these neuroses — they're easy enough to account for, once you understand the basic drives. Look:

"One characteristic that has been the subject of more worry, more sneers, more bad jokes than anything else here — except sex itself — is the back-to-the-womb movement. Introspection and introversion and agorophobia and heaven knows what else, from the ridiculous — like the man who can't work in an office where he can't have his back to the wall — to the sublime — like the Nirvana concept — is traced to a desire for the womb — *the enclosed, sustaining, virtually gravityless womb.* As soon as you discover that the womb itself is only a symbol for this other heritage, what explanation do you need instead?"

"Bedamned," whispered Chris.

"Another almost universal inner tension has to do with people, though some of us compensate admirably. What's the most ideal state for most people? The family — the enclosed, familiar, mutually responsive family unit. Only strangers cause communication to break down; only outsiders are unpredictable. Hence our

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cultural insanities — as I told you before, xenophobia, the fear of the foreigner. Spaceman travels in sexually balanced small-family units, the young getting their own ships and their own mates as the ships meet and cross the Universe over."

"Bedamned again," said Chris.

"Now your ideal spaceman: He'd have to be a neurotic on Earth, just as—if you can imagine it—a person brought up from birth to walk nothing but tight wires would be neurotic on solid ground. He'd wear himself out with unnecessary compensatory reflexes. Your true spaceman wants knowledge, not pastimes. His reaction to outside pressures is to retreat into his own resources — first, his ship (like you in your job); next, his own thoughts and where they might lead him (like you on your own time). And he wants a—"

CHRIS looked up into her eyes.

He said gently, "Go on."

"He wants, not women, but a mate," she said.

"Yes."

It took a while, but she then could smile and say, "Any more questions?"

"Yes . . . What's going to become of Billy?"

"Oh, he'll be all right," she said confidently. "He and all his kind. He'll graduate, and train some more, and graduate again. He'll stay where he is, perhaps, and train others. Or he'll get a big job — skipper of a Moon ferry, maybe, or second officer on the first Mars ship. Space will make him sick — tense, always apprehensive, never comfortable—but he'll be strong and stick it out. And after a while, he'll retire with honors and a pension."

"And he'll never know?"

"That would be too cruel . . . Any more?"

"Only one big one and I haven't been able to think around it. One of the most permeating fears of humankind — some say the only one we're actually born with and don't have to learn — is the fear of falling. How do you equate that with Spaceman?"

She laughed. "You can't see that?"

He shook his head.

She leaned forward, capturing him with her eyes and her urgency. "You are home, where you belong, in space, with all of safe immensity around you, and it's the way you live, and work, and sleep . . . and suddenly, *right there*, there's a *planet* under you!"

It hit him so suddenly, he gasped and actually strained upward to get away from the floor, the great pressing obtrusive bulk of Earth. "You're not falling,"

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she whispered into the heart of his terror. *"It's trying to fall on you!"*

He closed his eyes and clutched at the table and forced himself to reorient. Slowly, then, he looked at her and managed to grin. "You've got yourself a boy," he said. "Let's get *out* of here, Captain."

MY DEAR Chris and Gerda: I do declare I have never had my life turned so upsy turvy all at once in my life. What with you getting married so quick like that and then Mr. Magruder finding you that wonderful job but I still dont know what's so wonderful about New Zealand of all places. Still if your happy.

Then on top of that Billy running out to marry Tess Milburn like that just because you two did it I don't understand, I always thought Billy had his own ideas and couldn't be led, its as if somebody just pushed a button and bang he did it, come to think of it thats the way he decided to go after the Academy thing and he says it was you started him on this soap carving even. What with keeping the marriage secret until he graduates and trying to find a new bar of soap in the house I do declare I don't know where I am.

Speaking of Mr Magruder which I was, he's no longer with me, just paid up his month and left without a howdy do. I hear he's with Mrs. Burnett over to Cecil Street, all she has is that little house and that hopeless son who designs cameras and whatnot and hides in his room all the time, which is pretty insulting after all I did for him for eight solid years.

Well my dears take care of yourselves and send pictures of you and your pet sheep or goats or whatever it is you crazy kids are into.

Much love,
Mom.

Subscript by Etheric Radio Operator Grout X 3115
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2ND CHRISTOPHER STEIN
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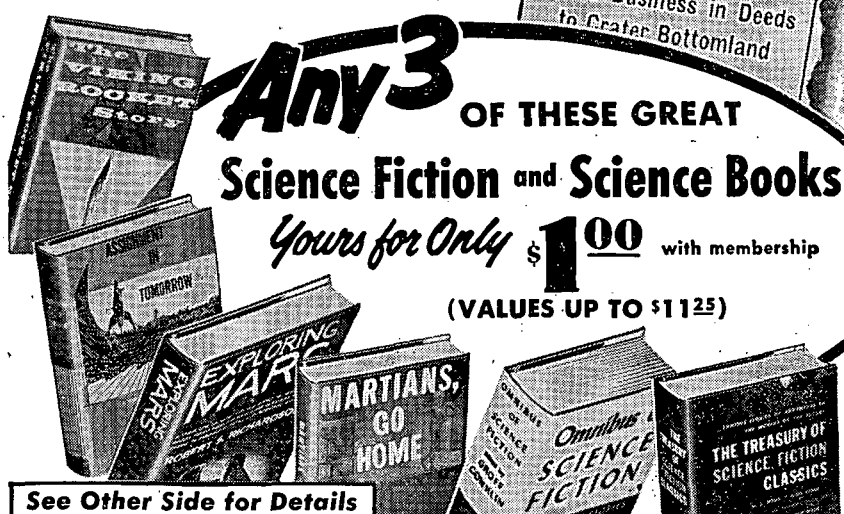

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